

The diagram illustrates the histological structure of the human retina, divided into the Choroid, Pigment Epithelium (PE), and Neuroretina. The Neuroretina is further subdivided into the Inner Plexiform Layer (IPL) and the Outer Plexiform Layer (OPL).

**Histological Layers (Left Column):**

- CHOROID:** Contains the **ST** (Stroma).
- PE (Pigment Epithelium):** Consists of the **CC** (Capillary Cells) and **BM** (Basal Membrane).
- IS (Inner Stroma):** The layer immediately below the PE.
- OS (Outer Stroma):** The layer immediately above the IS.
- PT (Photoreceptor Layer):** Contains the **IS** (Inner Segment) and **OS** (Outer Segment) of photoreceptors.
- ONL (Outer Nuclear Layer):** Contains the cell bodies of photoreceptors.
- OPL (Outer Plexiform Layer):** Contains the synaptic terminals of photoreceptors.
- INL (Inner Nuclear Layer):** Contains the cell bodies of bipolar and Müller cells.
- IPL (Inner Plexiform Layer):** Contains the synaptic terminals of bipolar and Müller cells.
- GCL (Ganglion Cell Layer):** Contains the cell bodies of ganglion cells.
- NFL (Nerve Fiber Layer):** Contains the axons of ganglion cells.
- ILM (Internal Limiting Membrane):** The innermost layer of the retina.

**Neural Circuitry (Right Column):**

- Photoreceptors:** Shown as vertical structures with **IS** (Inner Segment) and **OS** (Outer Segment).
- Bipolar Cells:** Shown as cells with dendrites in the OPL and axons in the IPL. Labels include **C** (Cones), **B** (Bipolar cells), and **A** (Amacrine cells).
- Ganglion Cells:** Shown as cells with dendrites in the IPL and axons in the NFL. Labels include **G** (Ganglion cells) and **B** (Bipolar cells).
- Müller Cells:** Shown as cells with processes extending from the IPL to the ONL. Labels include **M** (Müller cells) and **B** (Bipolar cells).
- RC (Retinal Cells):** Shown as small cells in the ONL.

Fig. 1

## Fig. 2

[illegible]

## Human IPM 150

001 TAAACCAAGAAGGTTATCCTCAATCATCTGGTATCAATATATAATTATTTTCTTTTGTACTTTTAAATGAGATTGAGGTTGTTCTGTGATTGTTA  
101 TCAGAATTACCATGCACAAAAGCCAGAATGTATTTGAAACTAGAAGAGCTATTTTGTGTTTGGATTCTTCCAAGTTCAAGGAATAAGATATCT  
M Y L E T R R A I F V F W I F L Q V Q G T K D I

201 CCATTAACATATACCATTTCTGAAACTAAAGACATAGACAATCCCCAAGAAATGAAACAACAGTAAAGTACTGAAAAATGTACAAAATGTCAACTATGAG  
S I N I Y H S E T K D I D N P P R N E T T E S T E K M Y K M S T M R

301 ACGAATATTGATTTGGCAAAGCATCGAACAAAAAGATCCGCATTTTCCCAACGGGGTTAAAGTCTGTCCACAGGAATCCATGAAACAGATTTTAGAC  
R I F D L A K H R T K R S A F F P T G V K V C P Q E S M K Q I L D

401 AGTCTTCAAGCTTATTATAGATTGAGAGTGTGTGAGGAAGCAGTATGGAAGCATATCGGATCTTTCTGGATCGCATCCCTGACACAGGGGAATATCAGG  
S L Q A Y Y R L R V C Q E A V W E A Y R I F L D R I P D T G E Y Q

501 ACTGGGTGAGCATCTGCCAGCAGGAGACCTTCTGCCTCTTTGACATTGGAACAACTTCAGCAATTCCCAGGAGCACCTGGATCTTCTCCAGCAGAGAAT  
D W V S I C Q Q E T F C L F D I G K N F S N S Q E H L D L L Q Q R I

601 AAAACAGAGAAGTTTCCCTGACAGAAAAGATGAAATATCTGCAGAGAAGACATTGGGAGAGCCTGGTGAACCATTTGTCAATTCAACAGATGTTGCCAAC  
K Q R S F P D R K D E I S A E K T L G E P G E T I V I S T D V A N

701 GTCTCACTTGGGCTTTCCCTCTCACTCCTGATGACACCCTCCTCAATGAAATTCTCGATAATACACTCAACGACACCAAGATGCCTACAACAGAAAGAG  
V S L G P F P L T P D D T L L N E I L D N T L N D T K M P T T E R

801 AAACAGAATTCGCTGTGTGGAGGAGCAGAGGGTGGAGCTCAGCGTCTCTCTGGTAAACCAGAAGTTCAAGGCAGAGCTCGCTGACTCCAGTCCCCATA  
E T E F A V L E E Q R V E L S V S L V N Q K F K A E L A D S Q S P Y

901 TTACCAGGAGCTAGCAGGAAAGTCCCAACTTCAGATGCAAAAGATATTTAAGAACTTCCAGGATTCAAAAAATCCATGTGTTAGGATTTAGACCAAAG  
Y Q E L A G K S Q L Q M Q K I F K K L P G F K K I H V L G F R P K

1001 AAAGAAAAGATGGCTCAAGCTCCACAGAGATGCAACTTACGGCCATCTTTAAGAGACACAGTGCAGAAGCAAAAAGCCCTGCAAGTGACCTCCTGTCTT  
K E K D G S S S T E M Q L T A I F K R H S A E A K S P A S D L L S

1101 TTGATTCCAACAAAATGAAAGTGAGGAAGTCTATCATGGAACCATGGAGGAGGACAAGCAACCAAGAAATCTATCTCACAGCTACAGACCTCAAAAGGCT  
F D S N K I E S E E V Y H G T M E E D K Q P E I Y L T A T D L K R L

1201 GATCAGCAAAGCACTAGAGGAAGAACAATCTTTGGATGTGGGACAATTCAGTTCACTGATGAAATGCTGGATCACTGCCAGCCTTTGGTCTGACACC  
I S K A L E E E Q S L D V G T I Q F T D E I A G S L P A F G P D T

1301 CAATCAGAGCTGCCACATCTTTTGTGTTATAACAGAGGATGCTACTTTGAGTCCAGAACTTCTCTGTTGAACCCAGCTTGAGACAGTGGACGGAG  
Q S E L P T S F A V I T E D A T L S P E L P P V E P Q L E T V D G

1401 CAGAGCATGGTCTACCTGACACTTCTTGGTCTCCACCTGCTATGGCCTTACCTCCCTGTGAGAAGCTCCACCTTTCTTTATGGCATCAAGCATCTTCTC  
A E H G L P D T S W S P P A M A S T S L S E A P P F F M A S S I F S

1501 TCTGACTGATCAAGGCACCACAGATACAATGGCCACTGACCAGACAATGCTAGTACCAGGGCTCACCATCCCCACCAGTGATTATTCTGCAATCAGCCAA  
L T D Q G T T D T M A T D Q T M L V P G L T I P T S D Y S A I S Q

1601 CTGGCTCTGGGAATTTACATCCACCTGCATCTTCAGATGACAGCCGATCAAGTGCAGGTGGCGAAGATATGGTCAGACACCTAGATGAAATGGATCTGT  
L A L G I S H P P A S S D D S R S S A G G E D M V R H L D E M D L

1701 CTGACACTCCTGCCCATCTGAGGTACCAGAGCTCAGCGAATATGTTTCTGTGCCAGATCATTCTTGGAGGATACCACTCCTGTCTCAGCTTTACAGTA  
S D T P A P S E V P E L S E Y V S V P D H F L E D T T P V S A L Q Y

1801 TATCACCCTAGTTCTATGACCATTTGCCCCAAGGGCCGAGAGCTGGTAGTGTCTTCACTGCTGCGTGTGCTAACATGGCCTTCTCCAACGACCTGTTCT  
I T T S S M T I A P K G R E L V V F F S L R V A N M A F S N D L F

1901 AACAAGAGCTCTCTGGAGTACCGAGCTCTGGAGCAACAATTCACACAGCTGCTGGTTCCATATCTACGATCCAATCTTACAGGATTTAAGCAACTTGAA  
N K S S L E Y R A L E Q Q F T Q L L V P Y L R S N L T G F K Q L E

2001 TACTTAACTTCAGAAAACGGGAGTGTGATTGTGAATAGCAAAATGAAGTTTGTCTAAGTCTGTGCCGTATAACCTCACCAAGGCTGTGCACGGGGTCTTGG  
I L N F R N G S V I V N S K M K F A K S V P Y N L T K A V H G V L E

2101 CGATTTTCTGTTCTGCTGCAGCCCAACAACCTCCATCTGGAATAGACAGCTACTCTCTCAACATTGAACAGCTGATCAAGCAGATCCCTGCAAGTTTCTG  
D F R S A A A Q Q L H L E I D S Y S L N I E P A D Q A D P C K F L

2201 GCCTGCGGCGAATTTGCCCAATGTGTAAAGAACGAACGGACTGAGGAAGCGGAGTGTGCTGCAAAACCAGGATATGACAGCCAGGGGAGCTGGACGGTC  
A C G E F A Q C V K N E R T E E A E C R C K P G Y D S Q G S L D G

2301 TGAACACAGGCTCTGTGGCCTGGCACAAGGAATGCGAGGTCTCCAGGGAAAGGGAGCTCCATGCGGTTCCAGATCACTCTGAAAATCAAGCATACAA  
L E P G L C G L A Q R N A R S S R E R E L H A V P D H S E N Q A Y K

2401 AACTAGTGTAAAAGTTCCAAAATCAACAAAATAACAAGGTAATCAGTAAAAGAAATTCGAATTACTGACCGTAGAATATGAAGAATTTAACCATCAAG  
T S V K S S K I N K I T R STOP

2501 ATTGGGAAGGAAATTTAAAACTGAAAATGTACAATTATCACTTAGGCTATCTCAAGAGAGATGATTTGCCTTCTCAAGGAAAATGGAGACAGGCATATTC  
2601 ATGGGTCAATCAAAATCCAGACATACAGTCAACACTGAGAATCAGCACACCATATTTCAAATATAGAAGAGTCACTGACTTGGCAACCAAGTAAATCTG  
2701 AAAAAAAGACACTTACTTATTATTTAAACCCCAATGCAATCAGCGAAACATATTTTACTATTCTTGGATGATAGTCAAAATGATCAAGCCAGGTT  
2801 TGCTTCCACCTTCCCTGAAAATTTTACTCACAGATCATTTGCAACAAGCATAGCTTACTTATGTTTGGGACTGAACAATTTATTGGGAAGCAAACTCT  
2901 TTATATGCTAGAAAAGTACATTTAAAAGATGACTACTTACGAGGGAGATGCAGGTCTCTTAAACGCATGAATGTATGTAGTGTGTAGGCACTGTAGTGA  
3001 GTGTATATATGCTCCACACTACGTCTGATAAACACAAACCTCAGTATTCAGTTATTAGGCACACTAGTTTATACGCAACTACTGCTTACATAGTAGACT  
3101 GTTTTGTGCAATAATCTTTGAATTGTTCTTTAAAAGAAACTGAGGTTTCAATACACATACCATGGAATAATCTTACTTTTCTTGTACTACACAAAGC  
3201 TATTTTAAAGAAGATGCTATGTTGGGAGAAGGGCAAGTTGTACTATATGACATAATCAAT

Fig. 3

## Human IPM 200

001 CGGGYWAYTTTGAAGGACAACCATTTTCTTTCCGCTAATTTATAATGGTTTTGAAGTGGTTGTTTCATTCTCAAACATAGACTTTTAAATGTTAGGTCT  
101 TTCCTATAACTCTTTGTTATTGGAAGTTTCAAGGATTGGACACTCAATTAAGGATTCTGTCTCTCTCATTCCTTTGGTTTGGCCCAAATGATTATG  
M I M

201 TTTCTCTTTTGGGAAGATTCTCTGGGTATTTTGATATTTGTCTGATAGAAGGAGACTTTCCATCATTAAACAGCACAAACCTACTTATCTATAGAGG  
F P L F G K I S L G I L I F V L I E G D F P S L T A Q T Y L S I E

301 AGATCCAAGAACCCAAGAGTGCAGTTTCTTTCTCTGCTGAAGAATCAACAGACCTTTCTCTAGCTACCAAAAAGAAACAGCCTCTGGACCGCAGAGA  
E I Q E P K S A V S F L L P E E S T D L S L A T K K K Q P L D R R E

401 AACTGAAAGACAGTGGTTAATCAGAAGCGGAGATCTATTCTGTTTCTTAATGGAGTGAATCTGCCAGATGAAAGTGTTCAGAGGCTGTGGCAAAT  
T E R Q W L I R R R R S I L F P N G V K I C P D E S V A E A V A N

501 CATGTGAAGTATTTAAAGTCCGAGTGTGTGAGGAAGCTGTCTGGGAAGCCTTCAGGACTTTTGGGATCGACTTCTGGGCGTGAGGAATATCATTACT  
H V K Y F K V R V C Q E A V W E A F R T F W D R L P G R E E Y H Y

601 GGATGAATTTGTGTGAGGATGGAGTCAAGTATATTTGAAATGGGCACAAATTTAGTGAATCTGTGGAACATAGAAGCTTAATCATGAAGAAACTGAC  
W M N L C E D G V T S I F E M G T N F S E S V E H R S L I M K K L T

701 TTATGCAAAGGAACTGTAAAGCAGCTCTGAAGTGTCTTCTCCAGTTCCTGTTGGTGATACTTCAACATTGGGAGACACTACTCTCAGTGTTCACATCCA  
Y A K E T V S S S E L S S P V P V G D T S T L G D T T L S V P H P

801 GAGGTGGACGCCTATGAAGGTGCCTCAGAGAGCAGCTTGGAAAGGCCAGAGGAGATATTAGCAATGAAATTGAGAATGTGATAGAAGAACCCACAAAC  
E V D A Y E G A S E S S L E R P E E S I S N E I E N V I E E A T K

901 CAGCAGGTGAACAGATTCAGAAATTCAGTATCCACCTTTTGGGAAGCAGTACAGGAAGAACTACAGGATTCCTCCAGCTTTTACCACCAGCACCTTGA  
P A G E Q I A E F S I H L L G K Q Y R E E L Q D S S S F H H Q H L E

1001 AGAAGAATTTATTTTCAGAGGTTGAAAATGCATTTACTGGGTACCAGGCTACAAGGAAATTCGTGTACTTGAATTTAGGTCCCCCAAGGAAATGACAGT  
E E F I S E V E N A F T G L P G Y K E I R V L E F R S P K E N D S

1101 GGCGTAGATGTTTACTATGCAGTTACCTTCAATGGTGAGGCCATCAGCAATACCACCTGGGACCTCATTAGCCTTCACTCCAACAAGGTGGAACCATG  
G V D V Y Y A V T F N G E A I S N T T W D L I S L H S N K V E N H

1201 GCCTTGTGGAAGTGGATGATAAACCCACTGTTGTTTATACAATCAGTAACCTCAGAGATTATATTGCTGAGACATTGCAGCAGAATTTTGTCTGGGAA  
G L V E L D D K P T V V Y T I S N F R D Y I A E T L Q Q N F L L G N

1301 CTCCTTCTGAATCCAGATCCTGATTCCCTGCAGCTTATCAATGTGAGAGGAGTTTGGCGTCACCAAAGTGAAGATCTAGTTTGAACACCCAAAGTTCA  
S S L N P D P D S L Q L I N V R G V L R H Q T E D L V W N T Q S S

1401 AGTCTTCAGGCAACGCCGTCATCTATTCTGGATAATACCTTTCAAGCTGCATGGCCCTCAGCAGATGAATCCATCACCAGCAGTATTCCACCCTTGATT  
S L Q A T P S S I L D N T F Q A A W P S A D E S I T S S I P P L D

1501 TCAGCTCTGGTCTCCTCCTCAGCCACTGGCAGGAACTCTGGTCAAGAACTCTTTGGGTGATTTAGTGTCTACACACAAATAGCCTTTCCCTCGAAGAT  
F S S G P P S A T G R E L W S E S P L G D L V S T H K L A F P S K M

1601 GGGCCTCAGCTCTTCCCCAGAGGTTTATAGAGTTAGCAGCTTACTCTTCAATCTGTACCCCCGCGAGTGTTCAGACTGGCTTGCCTGTGGCTTCTGAG  
G L S S S P E V L E V S S L T L H S V T P A V L Q T G L P V A S E

1701 GAAAGGACTTCTGGATCTCACTTGGTAGAAGATGGATTAGCCAATGTTGAAGAGTCAAGAGATTTTCTTTCTATTGATTCAATGCCTTCAAGTTCAATCA  
E R T S G S H L V E D G L A N V E E S E D F L S I D S L P S S F

1801 CTCAACCTGTGCCAAAAGAAACAATACCATCCATGGAAGACTCTGATGTGCTTAAACATCTTACCATATCTGACCTCTTCTATACCTTTTGGCTTGA  
T Q P V P K E T I P S M E D S D V S L T S S P Y L T S S I P F G L D

1901 CTCCTTGACCTCCAAAGTCAAAGACCAATTAAGAGTGAAGCTTTCTTCCGAGATGCATCCATGGAAGAAAGAGTTAATATTTGACGGTGGTTTAGGTTCA  
S L T S K V K D Q L K V S P F L P D A S M E K E L I F D G G L G S

2001 GGGTCTGGGCAAAAGGTAGATCTGATTACTTGGCCATGGAGTGAGACTTCATCAGAGAAGAGCGCGAACCAGTGTCCAAGCCGTGGCTTGAAGATGATG  
G S G Q K V D L I T W P W S E T S S E K S A E P L S K P W L E D D

2101 ATTCACTTTTGGCAGCTGAGATTGAAGACAAGAACTAGTTTATGTTGACAAAATGGATTCCACAGACCAAATTAGTAAGCACTCAAAATATGAACATGA  
D S L L P A E I E D K K L V L V D K M D S T D Q I S K H S K Y E H D

2201 TGACAGATCCACACACTTTCCAGAGGAAGAGCCTCTTAGTGGGCTGCTGTGCCATCTTCGAGATACTGCAGCTGAATCTGCGTCTTAACCTCCCC  
D R S T H F P E E E P L S G P A V P I F A D T A A E S A S L T L P

2301 AAGCACATATCAGAAGTACCTGGTGTGATGATTGCTCAGTTACCAAAGCACCTCTTATAGTACATCTGTAGCAATCTCTGCTCTACTGATAAATCAG  
K H I S E V P G V D D C S V T K A P L I L T S V A I S A S T D K S

2401 ATCAGGCAGATGCCATCCTAAGGGAGGATATGGAACAAATTAAGTGTGATCCTTCAACTATGAATGGTTTGAAGTGAAGTTTCAATGGTAAAGCCAGATAT  
D Q A D A I L R E D M E Q I T E S S N Y E W F D S E V S M V K P D M

2501 GCAAACTTTGTGGAATATATTGCCAGAATCAGAGAGAGTTGGACAAGAACTTCTTCCCTAGAGAAATTTGCCAGAGACATATTGGCAAGTACACCACAG  
Q T L W T I L P E S E R V W T R T S S L E K L S R D I L A S T P Q

2601 AGTGCTGACAGGCTCTGTTATCTGTGACACAGTCTACCAAATTCGCTCCAACCAATCTCCACCTGCTAGAGGATGAAGTAATTATGGGTGTACAGG  
S A D R L W L S V T Q S T K L P P T T I S T L L E D E V I M G V Q

2701 ATATTTGTTAGAACTGGACCGGATAGGCACAGATTACTATCAGCCTGAGCAAGTCCAAGAGCAAAATGGCAAGGTGGTAGTTATGTGGAAATGTCAAC  
D I S L E L D R I G T D Y Y Q P E Q V Q E Q N G K V G S Y V E M S T

2801 AAGTGTTCCTCCACAGAGATGGTTAGTGTGGCTTGGCCACAGAAGGAGAGATGACTTGAAGTTATACCCAGACTTCAGGAGCTTTGGTGGTTTCTTC  
S V H S T E M V S V A W P T E G G D D L S Y T Q T S G A L V V F F

2901 AGCCTCCGAGTGAATCATGATGTTTTCAGAAGATCTGTTTAAATAAACTCCTTGGAGTATAAGCCCTGGAGCAAAGATTCCTTAGAATGTCTGGTTTC  
S L R V T N M M F S E D L F N K N S L E Y K A L E Q R F L E L L V

3001 CCTATCTCCAGTCAAATCTCACGGGGTTCCAGAACTTAGAAATCCTCAACTTCAGAAATGGCAGCATTGTGGTGAACAGTCGAATGAAGTTTGCCAATTCT  
 P Y L Q S N L T G F Q N L E I L N F R N G S I V V N S R M K F A N S  
 3101 TGTCCCTCCTAACGTCAACAATGCGGTGTACATGATTCTGGAAGACTTTTGTACCACTGCCTACAATACCATGAACTTGGCTATTGATAAAATACTCTCTT  
 V P P N V N N A V Y M I L E D F C T T A Y N T M N L A I D K Y S L  
 3201 GATGTGGAATCAGGTGATGAAGCCAACCCCTTGCAAGTTTCAGGCCTGTAATGAATTTTCAGAGTGTCTGGTCAACCCCTGGAGTGGAGAAGCAAAGTGCA  
 D V E S G D E A N P C K F Q A C N E F S E C L V N P W S G E A K C  
 3301 GATGCTTCCCTGGATACCTGAGTGTGGAAGAACGGCCCTGTCAGAGTCTCTGTGACCTACAGCCTGACTTCTGCTTGAATGATGGAAAGTGTGACATTAT  
 R C F P G Y L S V E E R P C Q S L C D L Q P D F C L N D G K C D I M  
 3401 GCCTGGGCACGGGGCCATTGTAGGTGCCGGGTGGGTGAGAACTGGTGGTACCGAGGCAAGCACTGTGAGGAATTTGTGTCTGAGCCCGTGATCATAGGC  
 P G H G A I C R C R V G E N W W Y R G K H C E E F V S E P V I I G  
 3501 ATCACTATTGCCTCCGTGGTTGGACTTCTTGTCTATCTTTCTGCTATCATCTACTTCTTCATCAGGACTCTTCAAGCACACCATGACAGGAGTGAAAGAG  
 I T I A S V V G L L V I F S A I I Y F F I R T L Q A H H D R S E R  
 3601 AGAGTCCCTTCAGTGGCTCCAGCAGGCAGCCTGACAGCCTCTCATCTATTGAGAATGCTGTGAAGTACAACCCCGTGTATGAAAGTCACAGGGCTGGATG  
 E S P F S G S S R Q P D S L S S I E N A V K Y N P V Y E S H R A G C  
 3701 TGAGAAGTATGAGGGACCCCTATCCTCAGCATCCCTTCTACAGCTCTGCTAGCGGAGACGTGATTGGTGGGCTGAGCAGAGAAGAAATCAGACAGATGTAT  
 E K Y E G P Y P Q H P F Y S S A S G D V I G G L S R E E I R Q M Y  
 3801 GAGAGCAGTGAGCTTTCAGAGAGGAAATTCAAGAGAGAATGAGAGTTTGGAACTGTATGCCAATGATCCTGAGTTTGCAGCTTTTGTGAGAGAGCAAC  
 E S S E L S R E E I Q E R M R V L E L Y A N D P E F A A F V R E Q  
 3901 AAGTGAAGAGGTTTAACCAAACTCCTGTCTGAAACTGATTAGAAGCCTGGAGAAGATGGAGATTACTTGTACTTATGTCATATAATTAACCTGGAT  
 Q V E E V STOP  
 4001 TTTAAACACTGTTGGAAGAAGAGNTTCTATGAAAAAATTAAATATAGGGCACACTGTTTTTTTTTTCAGCTTAAGNTTTCAGAATGTAGTNAGAGATGTW  
 4101 MCATTTTATTCTATAAAGACTGAATGCTGTGTTTAAATAATTGAAAACTACGTTAAAAAAA

Fig. 4B

136207-56706700





1 TGGATTTTTC TCCAA CA AGGAATCAAA GTATGTCAAG AAGT GTG GGAAGCATAT  
 61 CGTATCTTTC TGGAC AAT TCCTGACACA GAGGAATATC AAG GGGT CAGCCTCTGC  
 121 CAGAAAGAAA CCTTCTGCCT CTTTGACATT GGGAAAACT CCAGCAACTC CCAGGAGCAC  
 181 CTAGATCTTC TTCAGCAGAG AATAAACAG AGAAGCTTCC CTGGGAGGAA AGATGWGACA  
 241 GCCTCCATGG AGACACTGGA AGCACCTACT GRAGCCCCTG TGGTACCCAC AGATGTTTCC  
 301 AGGATGTCCC TGGGGCCMTT CCCACTTCCT TCTGATGACA CAGACCTCAA GGAGATTCTC  
 361 AGTGTCACCC TCAAGGACAT TCAAAGCCC ACAACAGAAA GTAWAACAGA ACCTATTCA  
 421 GTGTCTGAAT TCTCATCAGA GGAGAAGGTG GARTTCAGCA TCTCTCTGCC AAACCACAGG  
 481 TTCAAGGCAG AGCTCACCAA CTCTGGGTCA CCATACTACC AGGAAGTGGT GGGACAGTCC  
 541 CAACTGCAGT TGCAAAAGAT ATTTAAGAAA CTTCCAGGAT TCGGAGAAAT CCGTGTATTA  
 601 GGATTAGAC CAAAGAAAGA AGAAGATGGT TCAAGCTCCA CAGAAATACA GCTTATGGCC  
 661 ATCTTTAAGA GGGACCATGC AGAAGCAAAA AGCCCTGATA GTCATCTACT GTCTCTTGAT  
 721 TCCAACAAAA TTGAAAGTGA AAGAATCCAT CATGGAGTCA TAGAAGACAA ACAACCAGAA  
 781 ACCTACCTCA CAGCTACAGA CCTCAAAAAA CTCATCATAC AACTACTAGA TGGAGACCTG  
 841 TCCTTGGTAG AAGGGAAAAT TCCATTCCGT GATGAAGTTA CTGGGACACT CTTGAGACCT  
 901 GTCAGTGAAC CAGATCTGCC CAAGCCCCTT GCTGATGTCA CAGAGGATGC CACTTTGAGT  
 961 CCAGAACTTC CTTTCGTTGA GCCTAGGCTT GAGGCAGTGG ACAGAGAAGG ATCTGAGCTG  
 1021 CCTGGAATGT CCTCCAAAGA CAGTTCTTGG TCTCCACCTG TATCAGCCTC AATTTCCCGA  
 1081 TCAGAAAATC TACCTTCGTT TACACCTAGC ATCTTCTCTC TAGATGCTCA AAGCCCCCT  
 1141 CCCTTGATGA CCACTGGCCC AACAGCACTC ATCCCCAAGC CCACTCTCCC CACTATCGAT  
 1201 TATTCTACCA TCCGCCAATT GCCTCTGGAA TCGTCACATT GGCCTGCATC CTCCAGTGAC  
 1261 AGAGAGCTGA TCACAAGCAG CCATGACACA ATCCGAGACC TAGATGGCAT GGATGTGTCT  
 1321 GACACGCCAG CTTGTGAGA AATATCAGAA CTGAGTGGAT ACGATTCTGC CTCGGGTCAG  
 1381 TTCTTGGAGA TGACCACACC CATCCCAACA GTACGGTTCA TCACCACCAG CTCCGAGACC  
 1441 ATTGCCACCA AGGGCCAGGA GCTAGTGGTA TTCTTCAGCC TCGGTGTTGC TAACATGCCG  
 1501 TTCTCCTATG ACCTGTTCAA CAAGAGTTCT CTGGAGTATC AAGCCCTGGA ACAACGATTC  
 1561 ACAGACCTGC TGGTTCCCTA TCTACGATCG AATCTTACGG GATTTAAGCA ACTGGAAATA  
 1621 CTCAGCTTCA GAAACGGAAG TGTGATCGTG AACAGCAAAG TGCGGTTTGC AAAGGCGGTA  
 1681 CCCTACAACC TCACCCAGGC CGTGCGCGGG GTCTTGGAGG ATCTTCGGTC CACCGCAGCT  
 1741 CAAGGGCTCA ATCTGGAAAT CGAAAGCTAC TCCCTCGACA TTGAACCAGC TGATCAGGCG  
 1801 GATCCCTGCA AACTCCTAGA CTGTGGCAA TTTGCCCAGT GTGTAAAGAA TGAGTGGACA  
 1861 GAGGAAGCAG AGTGTGCTG CAGACAGGGA CATGAGAGCC ACGGGACCCT GGAATACCAG  
 1921 ACCCTGAACC TCTGTCCCCC TGGAAAGACT TGTGTGGCCG GCCGAGAACA AGCAACTCCA  
 1981 TGCAGGCCAC CAGATCACTC TACAAACCAA GCTCAGGAAC CTGGTGTTAA AAAGCTACGT  
 2041 CAGCAAAATA AGGTAGTCAA GAAAGAAAT TCTAACTAT CAGCTATAGG ATTTGAAGAA  
 2101 TTTGAARACC AGGACTGGGA GGGAAATTAA AAGCTGGAAT CATATGCATT ATGTTGCAA  
 2161 CTCTGTTGAA AGGAACTTT ATTTCTTAA GAAAGGTGTA TCTGTTCTGT TAACTTCTGA  
 2221 AAAACAGAGG GAGAGATTCA GTGGTCATTG GAATACAGGC ATGTAATCAA CTTTGAGACT  
 2281 CAGCATGCTT GAACAAGAGC ACAGGCGTGT ATTTGATGAC AGTTAAGCCT GGTGTTGGGCG  
 2341 GGGGGCACAT ATTTTATAGT AAAACTCAA GCAATCATTG GAACACATTT GACTATTTT  
 2401 GGACAGTACT CAAGTAGCAA AGATAAGGTT AGCTTTTTTC TTTCTTTAA TTATTACATA  
 2461 AARCTTATTT CAAATAAATA CAACTTGTTT AGTGGGTTGT ACAATATTGA GGATCTGATT  
 2521 CTTTTATATG TTAGAATATA CAGTTAAAG ATTATCATTT GGGCCAGAGA GATAGCTAAG  
 2581 TGGTTAAGAG TATATACTGC TCTTCCAGAA GCCCTGGGT TACCGTCCCA ACAGCCACAT  
 2641 TGAAGGCTC ACACACACCT GTAAGTCAGG CTCCAGAGAA CAAACACCCT CCTCTGGCCT  
 2701 TTGTACCCAC GTGCACATAA CCGCAAACAG ACACACCCAC GCTATTTTTT TAGAAGTCAT  
 2761 TGATTTTTTT AATTAGGGGT GGAAAKCAG GCTGGAGAGA TGAATCCGTG GTTAAGAACA  
 2821 GTTGTTGTTT TTCCAGAGGA CCCAGGTTCA GTTCCAGAA CCCACAAGGC NAGTCTCCCA  
 2881 ACTATTCATA ATTCTAGTTC AAGTGGATCC AGCACCTCT TCTAACTGAT ACTGCCAGTA  
 2941 CCAGGCAGCC ATGTGGTGCA TATGCATTTG GGCAGGTAAA AACTCAGAC ACGCAAAAAA  
 3001 TTTTAAATCT AAATTTTGAA AATATTTTAG TTTAAGGAT GATCACTGTG TGAGGGTCAG  
 3061 GTCTCTTATG TATGAATGTA GTACCAAGAA CTGTGATGAG TATATGTATG CTCCATTCTA  
 3121 TAGTCTCCTC TCTCTCTCTC TCTCTCTCTC TCTCTCTCTC TCTCTCTCTC TCTGGAATTC  
 3181 CGGAATTCCG GAATCCGGA ATTCCG

Figure 6A (SEQ ID NO:50)  
 (Mouse IPM150 cDNA)

1 WIFLQVQGIK VCQEVVWEAY RIFLD RIPDT EEYQGWVSLC QKETFCCLFDI GKNSSNSQEH  
 61 LDLLQORIKQ RSFPGRKDXT ASMETLEAPT XAPVVPTDVS RMSLGPFPLP SDDTDLKEIL  
 121 SVTLKDIQKP TTESXTEPIH VSEFSSEEV EFSISLPNHR FKAELTNSGS PYYQELVGQS  
 181 QLQLQKIFKK LPGFGEIRVL GFRPKKEEDG SSSTEIQLMA IFKRDHAEAK SPDSHLLSLD  
 241 SNKIESERIH HGVIEDKQPE TYLTATDLKK LIIQLLDGDL SLVEGKIPFG DEVTGTLFRP  
 301 VTEPDLPKPL ADVTEDATLS PELPFVEPRL EAVDREGSEL PGMSSKDSSW SPPVSASISR  
 361 SENLPSFPTS IFSLDAQSPP PLMTTGPTAL IPKPTLPTID YSTIRQLPLE SSHWPASSSD  
 421 RELITSSHDT IRDLGMDVS DTPALSEISE LSGYDSASGQ FLEMTTPIPT VRFITTSSET  
 481 IATKGQELVV FFSLRVANMP FSYDLFNKSS LEYQALEQRF TDLLVPYLRN NLTGFKQLEI  
 541 LSFRNGSVIV NSKVRFAKAV PYNLTQAVRG VLEDLRSTAA QGLNLEIESY SLDIEPADQA  
 601 DPCKLLDCGK FAQCVKNEW EEAECRCRQG HESHGTLDYQ TLNLCPPGKT CVAGREQATP  
 661 CRPPDHSTNQ AQEPGVKKLR QQNKVVKKRN SKLSAIGFEE FEXQDWEGN

Figure 6B (SEQ ID NO: 51)

Mouse IPM150 protein

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1 CCGTGGCAA TGTGAAG TATTTTAAAG CCCGAGTGTG CCAGG C ATCTGGGAAG  
 61 CCTTCAGGAA TTTGGGAT CGACTTCCTG GCGGTGATGA ATATC C TGGATGAATT  
 121 TATGTGAGGA TGGAGTCACA AGTGTATTTG AAATGGGCGC CCATTTTAGT CAGTCTGTGG  
 181 AACATAGAAA CCTAATCATG AAGAACTGG CTTACACAAG GGAAGCTGAG AGCAGCTCCT  
 241 GCAAGGATCA GTCCTGTGGG CCTGAGTTGT CTTTCCAGT TCCTATTGGT GAGACCTCAA  
 301 CACTGACAGG TGCTGTCTCC AGTGCTTCCT ATCCAGGGTT GGCTTCGGAG AGCAGCGCAG  
 361 CGTCACCGCA GGAGAGTATC AGCAATGAAA TTGAGAATGT GACAGAGGAG CCCACACAAC  
 421 CAGCTGCTGA ACAGATTGCG GAATTCAGCA TCCAATTCT GGGGAAGCGA TACAGTGAAG  
 481 AACTGCGGGA TCCCTCCAGC GCCCTCTACC GGCTCCTCGT GGAAGAGTTT ATTCAGAGG  
 541 TTGAAAAAGC ATTCACAGGG TTACCTGGCT ACAAGGGCAT CCGTGTTCTG GAATTCAGGG  
 601 CCCC GGAGGA AAATGACAGT GGGATAGATG TCACTATGC AGTTACCTTC AATGGCGAAG  
 661 CCATCAGCAA TACCACCTGG GACCTCATAA GCCTTCACTC CAACAAGGTA GAAAACCATG  
 721 GCCTTGTAGA GATGGATGAT AAACCCACTG CTGTCTATAC AATTAGTAAC TTCAGAGATT  
 781 ATATCGCTGA GACGCTGCAC CAGAACTTTT TGATGGGAAA TTCCTCTTTG AATCCAGATC  
 841 CCAAGCCTCT CCAGCTCATC AATGTGAGAG GAGTTTTGCT CCCCCAACA GAAGACATAG  
 901 TTTGGAACAC CCAAAGTTCA AGTCTTCAGG TGACAACATC CTCTATTTN GTGCTTCAGC  
 961 CTGACCTGCC TGTGGCTCCT GAGGGAAGGA CTTCTGGATC GTTCATATTA GAAGATGGGT  
 1021 TAGCCAGCAC TGAAGAATTA GAAGATACTT CTATTGATGG ATTGCCTTCA AGCCCATTA  
 1081 TTCAACCTGT GCCAAAAGAA ACAGTACCAC CTATGGAAGA CTCTGACACG GCTCTCTTGT  
 1141 CCACACCACA TCTGACCTCT TCTGCTATAG AAGACCTTAC TAAAGACATA GGGACACCTT  
 1201 CTGGCTTGGA GTCCTTGGCT TCAAACATCT CAGACCAGTT GGAAGTGATC CCATGGTTTC  
 1261 CAGACACCTC TGTGGAAAAA GACTTCATTT TTGAAAGTGG CTTGGGTTCT GGGTCTGGGA  
 1321 AAGATGTAGA TGTGATTGAT TGGCCATGGA GTGAGACTTC ATTAGAGAAG ACCACTAAAC  
 1381 CACTGTCAAA GTCATGGTCT GAAGAACAGG ATGCACTATT ACCAACTGAG GGTAGAGAAA  
 1441 AATTACATAT AGATGGCAGA GTAGATTCCA CAGAACAAT TATTGAATCA TCAGAACATA  
 1501 GATATGGAGA TAGGCCATA CATTTTATAG AGGAAGANTC CCATGTTAGA TCTACTATAC  
 1561 CCATCTTTGT AGAGTCCGCA ACTCCACCTA CATCTCCAAT CTTTCAAAA CACACTTCAG  
 1621 ATGTACCAGA CATTGATTCT TACTCACTTA CCAAACCACC CTTCTTACCG GTAACATAG  
 1681 CAATCCCTGC TTCCACTAAG AAAACAGATG AGGTCTCAA GGAAGATATG GTACATACAG  
 1741 AATCATCCAG TCACAAAGAA CTTGACAGTG AGGTCCAGT GTCAAGGCCA GATATGCAGC  
 1801 CTGTGTGGAC CATGTTGCCA GAATCAGATA CAGTTTGGAC AAGAACTTCT TCCTTAGGGA  
 1861 AATTGTCCAG AGACACATTG GCAAGTACAC CAGAGAGCAC TGACAGACTC TGGTTGAAAG  
 1921 CTTCCATGAC ACAGTCCACT GAATTGCCTT CAACCACCCA CTCCACCCAG CTAGAGGAGG  
 1981 AAGTAATAAT GGCGGTCCAG GATATTTTAT TAGAACTAGA TCAGGTAGGC ACAGATTATT  
 2041 ATCAGTCCGA GCTAACTGAA GAACAACATG GCAAGGCTGA CAGCTATGTG GAAATGTCTA  
 2101 CCAGTGTTCA CTACACAGAG ATGCCTATTG TGGCTCTGCC CACAAAAGGA GGTGTTCTGA  
 2161 GTCACACCCA GACTGCAGGA GCATTGGTGG TTTTCTTCAG CCTCCGCGTG ACAAACATGT  
 2221 TGTTTTTACA GACTTGTGTT AACAAAACT CTTTGAATA TAAAGCCCTG GAACAAAGAT  
 2281 TCTTAGAACT GCTGGCTCCC TATCTCCAGT CAAATCTGTC AGGGTTCCAG AACCTAGAAA  
 2341 TCCTGAGTTT CAGAAACGGC AGCATTGTGG TGAACAGCCG AGTGAGGTTT GCCGAGTCTG  
 2401 CCCCTCCTAA TGTCAACAAG GCCATGTATA GGATTCTGGA AGACTTTTGT ACCACTGCCT  
 2461 ACCAAACCAT GAAC TTGGAT ATCGATAAGT ACTCCCTGGA CGTGGAATCA GGTGATGAGG  
 2521 CCAACCCTTG CAAGTTTCAG GCCTGTAATG AATTTTCTGA GTGTTTGGTA AATCCATGGA  
 2581 GTGGAGAAGC AAAGTGCAA TGCTACCCTG GGTACCTGAG TGTGGATGAA CTGCCTTGTC  
 2641 AAAGTCTCTG TGATCTACAG CCTGACTTCT GCTTGAACGA TGGAAAGTGT GACATTATGC  
 2701 CTGGGCATGG AGCCATTTGT AGATGCCGGG TTGGTTCAA CTGGTGGTAT CGAGGCCAAC  
 2761 ACTGTGAGGA GTTTGTGTCT GAGCCCTTTG TCATAGGCAT CACTATAGCC TCTGTGGTTA  
 2821 GCTTCTCTCT GTTTGCTTCT GCTGTCGTCT TCTTCTTGT GAAGATGCTT CAAGCTCAGA  
 2881 ATGTCAGGAG AGAAAGGCAG AGGCCACCA GCTCCAGCAG GCACCCTGAC AGTCTGTCAT  
 2941 CTGTTGAGAA TGCTATGAAG TATAACCCTG CATATGAGAG CCACTTGGCT GGATGTGAAC  
 3001 TGTATGAGAA ATCCTATAGC CAACATCCCT TCTATAGCTC TGCTAGTGAA GAGGTGATTG  
 3061 GTGGTCTGAG CAGAGAAGAA ATCAGACAGA TGTATGAAAG TAGCGACCTT TCCAAAGAGG  
 3121 AAATTCAAGA GAGAATGAGG ATTTTGAAC TCTATGCTAA TGATCCTGAG TTTGCAGCTT  
 3181 TTGTGAGAGA GCATCAAATG GAGGAGCTTT AACTTAAATG CCTGATTCTT GACACCAATC  
 3241 AGAAGCTTGG AGAAGATGGA GAAGGCTTGT TCTCTCTGCT GTTTAACTAA TCCAGAAGAA  
 3301 GAGTTTGTAT TGAAGAATAA ATAAGGAAAC ATGGGACGCA CTTCTCATTC CAACACTGCA  
 3361 GCTTAATTTT TTGGAATGGA GCAAAAAA AATAAGTGAT GTATTTTATT TCTTACATTA  
 3421 AGAGATGTGT CAAAAGAAAA TAAAGTGGT GTGAACCTCTG ATTTTGTAA ATATTCTAAA  
 3481 AGCAAACAAA TAAACAGAA CCAAACCAA AGCTTAAAGC CAGACCTTGG AGTTGGGGCT  
 3541 GCAGTGCCCTC TGACTCTGAC TTTTGTAGAG CATCTCTAAG AACTATGGCC CAGGCTTCT  
 3601 AGTAAGAACA TAAAGTGAGA CTAATGAGTA AAGCTTAGAA TGCGACTGTT TTGTGACATA  
 3661 CTCGTTAAAG TCGAATGAGA TAGAGGAAGC TTTGAAGTAA TTTTAATATA GTTTAACTC  
 3721 AAACACTCAT CTAATAAAA ATTAGGCTTT TGGAACAGAT TGCTGAGTCA GGCAATCTTT  
 3781 AGGTGCAGTA TATCTTGTGTT ATGTTTGATG CTTGCTTCT ATCTGTTCTT GAGCTTCTTG  
 3841 AGCCCATAGA TCAAGACTAC AATGCTCTTA AATTAGTTAT GTCAATATTT GCCACAGTTT  
 3901 GGTCCTCAAT TAGGCACCCT TAAGAGGAAG CAAATTGAGG AATTNCNNTT CATCAGCTTG  
 3961 GTTTGTGGAC ATACCAGTGG GCCTTTTTCT TGATTATTAA TTGATGTAGA AAGGCCCAGC  
 4021 TCACTATGGG TGGTACTATC CTTAGGCAGG GGTTTGGGGA GTTAAGTTGC AAAAGAAAGG  
 4081 TAAAGCCAGC TACAAGAAGC CAGCCAATAA GCACTTTCCT TTGTGGTTTC TTCTTCAAAC  
 4141 TCCTGTCTTG GCTTCTCTCT ATGGTAGACT ATAACCTATA AGCCAAATAA ACTCTTCTT  
 4201 GGAA

Figure 7A  
 (SEQ ID No: 52)  
 Mouse IPM200 cDNA

1 VANHVKYFKA RVCQEAIWEA FRTFWDRLPG RDEYRHWML CEDGVTSVFE MGAHFSQSVE  
61 HRNLIMKKLA YTREAESSSC KDQSCGPCLS FPVPIGETST LTGAVSSASY PGLASESSAA  
121 SPQESISNEI ENVTEEPTQP AAEQIAEFSI QLLGKRYSEE LRDPSSALYR LLVEEFISEV  
181 EKAFTGLPGY KGIRVLEFRA PEENDSGIDV HYAVTFNGEA ISNTTWDLIS LHSNKVENHG  
241 LVEMDDKPTA VYTISNFRDY IAETLHQNFL MGNSSLNPDP KPLQLINVRG VLLPQTEDIV  
301 WNTQSSSLQV TTSSIXVLQP DLPVAPEGRT SGSFILEDGL ASTEELEDTS IDGLPSSPLI  
361 QPVPKETVPP MEDSDTALLS TPHLTSSAIE DLT KDIGTPS GLESLASNIS DQLEVIPWFP  
421 DTSVEKDFIF ESGLGSGSGK DVDVIDWPWS ETSLEKTTKP LSKSWSEEQD ALLPTEGREK  
481 LHIDGRVDST EQIESSEHR YGDRPIHFIE EXSHVRSTIP IFVESATPPT SPIFSKHTSD  
541 VPDIDSYSLT KPPFLPVTIA IPASTKKTDE VLKEDMVHTE SSSHKELDSE VPSRPPDMQP  
601 VWTMLPESDT VWTRTSSLGK LSRDTLASTP ESTDRLWLKA SMTQSTELPS TTHSTQLEEE  
661 VIMAVQDISL ELDQVGTDYY QSELTEEQHG KADSYVEMST SVHYTEMPIV ALPTKGGVLS  
721 HTQTAGALVV FFSLRVTNML FSEDLFNKNS LEYKALEQRF LELLAPYLQS NLSGFQNLEI  
781 LSFRNGSIVV NSRVRFESA PPNVKNKAMYR ILEDFTTAY QTMNLDIDKY SLDVESGDEA  
841 NPCKFQACNE FSECLVNPWS GEAKCKCYPG YLSVDELPCQ SLCDLQPDFC LNDGKCDIMP  
901 GHGAICRCRV GSNWWYRGQH CEEFVSEPFV IGITIASVVS FLLVASAVVF FLVKMLQAQN  
961 VRRERQRPTS SSRHPDSLSS VENAMKYNPA YESHLAGCEL YEKSYSQHPP YSSASEEVIG  
1021 GLSREEIRQM YESSDLSKEE IQERMRIEL YANDPEFAAF VREHQMEEL

Figure 7B

(SEQ.ID No: 53)

Mouse 1PM 200 amino acids

1 GAACACTTGT AATACAAAAC AATTCCTATT TACAAAGTTT ACTGGTAATA CAAATACAGT  
 61 AGTTTACAGA GAACTTTCAT GTCTCTTAAT TCTTAACAAC GACCCTGTGA TACAGGTAGA  
 121 GATTATCACA TGTAATTTCT TTGGTGAGTA AACCGGCTCA AAGAGCTTAG GTTATTTACC  
 181 AAAATCAAAT ATTAAGTGAT AAAACCAAGA TTTGAGTCCA GGGTTTCTCA ATCTTAAATA  
 241 CAGGAATCTT TCTAGATTAC TATGATTCTC AGAAGTTTTT TTTAGCTTTT TGGTCAAGGC  
 301 TGTCAAAAAG AATAATTGCC AACTTAATAT TTGTTACCTA AGAGTTGTCC CTTGTTCTGA  
 361 ATTGTCAATA TGAAGCTTTT CTTAAGATTA AACTTTGACT CAGCTAATAA AATTTTCGGC  
 421 TTTTTTCTCC TACTCATACA ATAAATTTGG CAAGTAAGTT TCTTATAAGC TTACCAGTAT  
 481 TTTGCAAATA CAACTATGCA AATATATTTA ATGGTCATTT AGGTTTATTA GCTTTTATAA  
 541 AGGCTGAAAA TGTGGTTTAT TTGAGGCTGT ATTGAAAAAA TATACTTGAG CTTTTCCTAA  
 601 AGCATAAAAT AACATTGAGG GTGATTTAGC TAACACAATT AGTCAAGGAT TCTCAAGAGG  
 661 AATGTGGTTT AGATCTTTAC AATACACTTT TTTTCAGAGA ATTTTGCCAG AGATAACATG  
 721 AAATAAAATA TAATTTCAAT GCTATTTGAT AGTAAATCCA AGCTTCCACA GGGATTCTGA  
 781 TGAATTGCTT TCTACTAGGT TTACTTGATT TAAAAAACTG TTCTAATATA GAGAATTTCA  
 841 TCTGCAGGGA AAATGTTTTT TTGGTTAAGA GTTCCTCATG TAGATAAACA CACTGGGCCT  
 901 CACATTTAAT GGCAAATTAA GCAACAAAGT TATCGCACAG CTATCATTTA TATTAAGTGC  
 961 TTAATATGTT CCGGGCACTA CTCTAAGCAA AGTGAAGATT GAATTAGTTA ATTAGTTAAT  
 1021 TTAATCCTCA CATTAGCTCT ACCATGAGTT TACTATTTCT ATTCCATTTT ATACGTAAGG  
 1081 AAGGAGACAA AGTAAGTGAT TTTTCTATCA AGGAAGGAAA TTTGCAAGAG AATAGTTTCA  
 1141 TTACAAAAAC TAAATTTGTA CGTAGCTCTG TATTATTGAA ATAGGTAGAT ATAGTCAGTC  
 1201 TGGACTTTTT ATGCTTATAC ATCTTAGTCC CTAGGAAAAC CCAGAACTAA CAGATTCAGA  
 1261 AAAGTTGGAA AAATCAGTGA ATTATATGTG AAACACATTA TTCTTAGTGG ACTGCTTGTT  
 1321 AAAGGCAAGG AGAGTGTTAG TAAAGAGCTT AGGTAGATTA GAATAAGAA ATTGTCTCTC  
 1381 TCCATCTGCT CTAATTAGCT TATCTACCA GCTTTTATAG CATGCTGGTT ATTTCAAGAA  
 1441 AGAAGTGAGA GCTACTTGA AAGGACAACC ATTTTCTTT CCGCTAATTT ATAATGGTTT  
 1501 TGAAGTGGTT GTTCATTCTC AAACATAGAC TTTTAAATGT TAGGTCTTTC CTATAACTCT  
 1561 TTGTTATTGG AAGTTTCAAG GATTTGGACA CTCAATTAAG GATTCTGTCC TCTCCTCATT  
 1621 CCTTTGGTTT TGGCCCAAAT GATTATGTTT CCTCTTTTGG GGAAGATTTT TCTGGGTATT  
 1681 TTGATATTTG TCCTGATAGA AGGAGACTTT CCATCATTA CAGGTATTTA AAAATCTACA  
 1741 TTTGTTTGTA TCTTTCCATA TCTGTAGTAT ATGTTCTTCA AAAATAGGAT TATTTGATGT  
 1801 GATTGCTGTA AGAAATGGAA TCAAATACTT TATTAATCTT TGATATGGCT TCATTTAAAC  
 1861 CGTTTTAAAA TATCTCCCAA TAATTTTGGT TTTCCCTCAT TAGTAATTTT TGGTTTAAAC  
 1921 CTTACTTTTA TTTATTTTGT TGAAATTGGA TGTGTATTTA CTTGATTTTG ATAACAATCT  
 1981 TGAATGAAAG GAGTGGGAGT TAAATGGAAA AAGATGGACT GCCTCACTCC TCTTTTCCTT  
 2041 AGATATGCAT GCCTGCCTAT GATTTGGGCA CTGGCTTCTC TATCTTAATG TAGCCCAAGT  
 2101 GTCAGTTTTT CTTTAGTTGT TACCTTTTGT ACTGTATCTT CATTATCGAA GACTTGACTA  
 2161 TACTTTCACT CTGTAGCACA AACCTACTTA TCTATAGAGG AGATCCAAGA ACCCAAGAGT  
 2221 GCAGTTTCTT TTCTCCTGCC TGAAGAATCA ACAGACCTTT CTCTAGCTAC CAAAAAGAAA  
 2281 CAGCCTCTGG ACCGCAGAGA AACTGAAAGA CAGTGGTTAA TCAGAAGGCG GAGATCTATT  
 2341 CTGTTTCCTA ATGGAGTGAA AATCTGCCCC GATGAAAGTG TTGCAGAGGC TGTGGCAAAT  
 2401 CATGTGAAGT ATTTTAAAGT CCGAGGTAAG CGAACATCCA AATCCTTCAG CTCCATAATG  
 2461 AAATTCAAAC ATAGTTTAAT CATTTGTTAG GTAACATTGT AAATCAAAAT TTATGATAAT  
 2521 TTAGACAGGA CTGAGCCAAA ACTACCTTTC TACTGTTAAG AATATAGTGT TAATGGTAAC  
 2581 TTCAGAGAAC AGTTTACATT AAGAGAGGAG GTTTGTTTIT TTTCCAGTGC CCTCCAGTTA  
 2641 AGGCAATAAT ATCATTTAAT AATGACATGC ACTTTGAACC AAAGGAAGAA CGCTTTCATG  
 2701 ATTTGAGTTT GTAGCTTTTG GTGCGTTATG TAAGAACTT TTTTCACATG AGGGCAGTCA  
 2761 CAATAAGATG TCTTTCATTA ATTTCAACAA CATATTCAGA GAGGAAATGT CTTAAATCTT  
 2821 TTTAAGCACT TCAAAAATAC CAGTTTATGT TTTGGGCTAC ATTAATTTTA ATTTTACTT  
 2881 CTTCAATTACA GTAAATGCCT AAGTWTACCC ACAAATAGC TTTACCAAAG NTATACTCAC  
 2941 CTGCTTGCCT ATTTAATTAA TAGTTATTAT ATATACAAAT ATAATGTTTC TATATTTTAT  
 3001 AGTTTAGATA T

Figure 8 (SEQ ID NO: 54)

Exon 1+2, Human IPM200

1 TTTTTTTTTT TTTTATCAGA AATATGTGAT GACTTTTTGA GCAAGTAGAT GCAATGCAGT  
 61 TATGTCACTG CATTTAGCCA AAAAAGCTCC AGGCCATTTA TAAACGTCAG TGTCTCCTTC  
 121 CCCAGTGATC ATGAAAAGCA AAGAAGCTGA TTTTGAAGT TATGATTTCA GGAGAACATC  
 181 TGCAAACATT AAGGAACTG AAAATCACAG TGTCCATTAG GAAAACATTG GATTAAATAC  
 241 AGTATACTCA ATATCAGCTC CACTTTTGTG AAGTATAAAC ATGGACTTTT TTAAGAGATG  
 301 GGAGAGACAC TCCAGCTCAT GAAGAGATGA ATCAATTCTC TTTGTAAGAG AAAGGAATGG  
 361 GAAATATAAA TTCTCTTCAG AAATGAAAAG TTTAAACTGG ACATACATAC AGAAGGCCTT  
 421 TGACTGAGAA TCATTCCTAC ATCCCTCCAG AAAGGACACT TCAGTGTCTC AAGGAATCTG  
 481 TAGGAATCAG TCTATGATCA TTGTAAGAAC CCCAGAGCAT GTTAGCTTTT TGTAACAAAA  
 541 CACCTCTCTA TTTTCTAGTG TGTCAGGAAG CTGTCTGGRA AGCCTTCAGG ACTTTTTTGGG  
 601 ATCGACTTCC TGGGCGTGAG GAATATCATT ACTGGATGAA TTTGTGTGAG GATGGAGTCA  
 661 CAAGTATATT TGAAATGGGC ACAAATTTTA GTGAATCTGT GGAACATAGA AGCTTAATCA  
 721 TGAAGGTAAG TGTCACAACA AAGGAAGGGA TTCCTGGACT ATTGTAGGAG CATTTACACA  
 781 GCTAAGGCCT AAAGGAAGCA AAAGCAAGTG GCAAATGCCT GTATTACTCT TTTGTTGAAT  
 841 TGGGCTATCT GAGTAAGCTG CCCTAGGGTG TGGCCTAGTC TTTTATTCCT AGCTCTGGCC  
 901 TCTATAATAT ACATTATTAA TATTTTCATG TTATTCTGTC CACAAAAAGA AAAANAAAGA  
 961 CATTATTAAC TCAGACAAGA GCCTCAGCCT TGTTTATAGA TNTAAATATT TGGGAAATAA  
 1021 TATTCAGCAA AGGTTTAGGG TTAAGAAATN TAAATNCCGT GAGGAGNCAA ACATTTTTTG  
 1081 CCAAAGTT

Figure 9A SEQ ID No: 55  
 Exon 3, Human IPM200

1 GAGTAAGGAT TTTCTTATTG CATTCTGTGG TATAGTTTAA CATGTTCCCT TTGCCCAGTA  
 61 TATTTTCTTG TAAATTGGTA ATTCATTTCT TTATTTTAA TTAACAAACC CCACAACTT  
 121 CTTCTGTGTT AGAAATTTCA AACATCTACA AAAATAGAAT ACATGATAAG GTCCAGTTTT  
 181 AACACTTGTC AATTCACAAC CAATTTCCAA CCTTTACCCA CTTCTCCTCT CTGGTAGAGG  
 241 AGTTACTTCT TTTAGTATGT GTCCCCTTTA CTAGATAGCT CCTTAAGTAG AGGAATATTG  
 301 TCTTTGTGTT CCTAGTGTCT TGTGCAGAGT CTGGCATATA GTAGGTGCTC AATATATGCT  
 361 TGTTGAACGT ACCACAATTA TTTCTTGTTT TGAGAAGGCT CCATACAAAT ATGTCCTGAG  
 421 GTTAGAATGC ACCGAATTTT CAGGACAATA AAACAACTA TTTATAGGAA TGGTTTTTGA  
 481 AGTCAGTTCC TTATTTCTTG ATAGGAATTC TGACTTAATC GAGGACTGAA TTCATGCATA  
 541 TGTTTTTGCT TTTCTTCTTA GACACTACTC TCAGTGTTC ACATCCAGAG GTGGACGCCT  
 601 ATGAAGGTGC CTCAGAGAGC AGCTTGGAAG GGCCAGAGGA GAGTGTGAGT GATACTCTGT  
 661 TTTGTTAGTT AGTTTCTAAC ATGGAACATA GAGATTAAGA GAGAGTTTAT CTCCCATTCG  
 721 TGGACTACAC AGGACTTCAT GTAGTGTCTT GTTAGAAAA TGACATGGAT CCTAAAACCA  
 781 GTACATTAAA AACAAATTTG AGATTCCTTG GAGAACTGAG TAAATCTGCT CTTATTGGTG  
 841 AGTTTTTGGT GAGAGCTTCG AATTATAAAT GAAGTGGACT GTCATTGAGG TAAGCCCACT  
 901 GCCTCTTGTT GCCTCTGTGA CATGATTTTC TATGGTGGTT TTGCCTATGT TCTTCTCACC  
 961 CTTAATAGAC CAGATCTTAG CCTTCTTTAG TGGGTAATAA TATACATTTT ATGTAGTTTA  
 1021 AAAGTCAAAA AGTACCATGC ATTGTGAATG TACCATTATT AATAGAAACC TGTCCACTAA  
 1081 ACAACACTAA ATCCTATAGC TGAGTCTCTA TCACAAAAGA TACATACAGG TTAACAAAAA  
 1141 ATTTACACAT CGCCCAGGAA TATAGAAACA TTTTGTGTTAG ATAAGATATT TAAATACTGA  
 1201 ATTTAAAAAA TTAGGGGGTT CACAAAATCC TGTTTTTTTT TTT

Figure 9B SEQ ID No: 56  
 Exon 5, Human IPM200



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1 GTGCAGTGGA TCTTGGCTTA ACTAAAAACC TCCGCCTCCC AGGTTCAAGT GATTGCTCCT  
61 GCCTCAGCCT CCTGAGTGNG NTGGGATTNC AGATGCATAC TGCCATGCCC NAGNTAAATT  
121 TTTGNATTTT TAGTAGAGAT GGGGTTTCAG TTGGCCAGGC YTGGTCWTTG AACTCNTGAC  
181 CTCAAGTGAT NTGGCCCACC TTCGGCCTCC CAAAGTGCTG AGATTACAGG TGTGAGCCAC  
241 TTCTCCTGGC TGTTAGCCTG TGTCTTAAAG TCTACCCAAT TTGTTCCAAA GTCAAATACG  
301 AAATAATAAG ATTATCTTCA GAAGCTGCCT TTAGCACAGT TCTGACACAT TGAAACAATC  
361 AATAAATGTT TGTGATTGA ATGAATAAGC CTTGACATTT ATTGTTCTTT CTCTAAAAAT  
421 TCAGATTAGC AATGAAATTG AGAATGTGAT AGAAGAAGCC ACAAACCAG CAGGTGAACA  
481 GATTGCAGAA TTCAGTATCC ACCTTTTGGG GAAGCAGTAC AGGGAAGAAC TACAGGATTC  
541 CTCCAGCTTT CACCACCAGC ACCTTGAAGA AGAATTTATT TCAGAGGTGG GTGATTAAAA  
601 AAAAAACAAA CAAGGCAGTA TGCCTACTAT GTTAGTTTCC TATATTCACA AACTGTTTA  
661 AAGATAGGTT TAGGTTTCAA ATTGTTTGTC TACTTGGTTC CTGGAGTGGT TACTTAGCCA  
721 TTTCTTCASA AAACCTGTG AAAAGTCATA GGACAGATGA ATTCTTTCAC AGAAAGAAAA  
781 ATCTTGCCAT CTGCTNAAAA AATAAATGCA ATTTCCAAC TTTGCTGCAC AGCCAAGAAA  
841 GAATGTGTTT TGGTGGCATG GTTTTGACTT GAAAATTTTG NGAGAAATAA GCTTCTCTAA  
901 NAACTACAC CACACTGTAT TGTTTTNCTT ANGGGAACAT TACATTTAAT GCCTTTTAAT  
961 TCC

Figure 10A (SEQ ID NO: 57)  
Exon 6, Human IPM200

1 AATAAAATAA GAATGGCTTA TTACAGCTTC CTTTTGAAAC AATTTTTTTT TTCACATTTT  
61 CATCACATAA GGGAAAAAAC AGTGGTNTGG CCACCAAGGA GTATGCTTTT TATAATTTGG  
121 AAAAATTAAT ATTAAGCAC ATTGAAACCT TGAAAGACAA AATGAAAAAG AAAAATGTGG  
181 CAGTGTTTAG GTAAAATTTT TTCTTTCATT TTCTGACCTG GGTATGCCTA GCTAAGTGTA  
241 TAAGCTTCTA ATAGTTGTGA ACAGTTCACT TTTTATTCTA CTCTTAAAAG CATTATTTTC  
301 TATATATTTT TCCATATTTT TACATAGTTA TCATTTTAT TTGTACTTTT AACAGGTGTA  
361 AAATGCATTT ACTGGGTAC CAGGCTACAA GGAAATTCGT GTACTTGAAT TTAGGTAAAT  
421 AGACTTATCT AAATATGCAC ATTTTCAGTA GTATTCTTTA TTCTGAATGG AATGTCCATT  
481 ATATTTATCA CACATATTCT AACAATAAAT GGTTTGAATG CTGTAACCTA ATGCTATTTT  
541 TGGTAAATTA GTATTCTTGA TGTTAGTTTT TCAGGTGAGA AAATTGAGTT AGAAAAAGAC  
601 CAAATAATAA CTCAAAGAGA TATATTAGGT CTAAAATTGG CTAGGTAAAG AATTCAGGAA  
661 TTCATGTCTC CAGCTTGCTG CTGACAAGTT ACGTAGGTCT TATTTGACAC TGATAGGAGC  
721 CTGAAGGCAG ACGAGATGTG GCCCCAGTGT TTTCTTAAAG CTTGTCAGTG TGGTGATTTT  
781 GACATCTTGG TATGAGGCCA CCCTGGAAGG GATGCATTAG TCCTTGTTTA AACATAACAG  
841 TTCTGAGTAA ACCAGACACC TCTTTTAAAG ACATTTATTC CCTGCTTAAG ACTCACAGTG  
901 GAAACACTTG GTGACCATT ACTGAATGAA TACTTTTACT GAGTGAA

//

Figure 10B (SEQ ID NO: 58)  
Exon 7, Human IPM200

1 AACCTTATTT TATCTTTCTT TGGTCTGTAG TTTCTATACC TATATTATGA GGATACTAAT  
61 AAATCTTAAT GAAAGATTTA AATCAAATTT TTTATAAAAA TGCTTAGCAT AGTTCCCTGG  
121 CACATGGAAA GTTCTATTTA AGCATCTGCT ACATAAAATA ATAAATATTA AAAGGTTATG  
181 CAGTATACCT GTGGATTAGT CAGTCCTGAC ATTTACCTAT ACCCTTACTA CTTNACAGTG  
241 TACCATCTGA TTTTAATACT GCATAACATG TTGTATCCCA AAAAAAGAAG GTTCCCAATT  
301 TTGTTAAAGC CAACAACCTGG AGTCCTCTGC TGATTTACTG AAAAAAGTTT CTTTATGAAG  
361 AAA'TAGCCAT ATGTGAATTA TTTTAAAGTA TTTTTAAAAT TTAGAAGAAA ATAAAGACCA  
421 TGGTTTTTAAA ATAAAATGCT TTTTTCACCT TTGCTCACTT CCTTCAATCC ATAGGAATTT  
481 GTCAGCATTT TTATTTAAGG AAGCATTTCA AAGAAATTCA GAGGAAATAC ATGAATAACT  
541 TGCACTTTGA TGAATGATGT GACAATAATA ACTGTCTCAA ACTCTGTTTA ATATTTTTAA  
601 TTTTGTGTTTT CAGGTCCCCC AAGGAAAATG ACAGGTACTT TTTGGCACTT TCTCTAATGT  
661 CCATTGAATT GGGAGACAGT TTAGTAAATA TAGCAGGCCG TAGGTCCAGG GGAGCATAAC  
721 TCAAATATTA TATCACTTCC AATATCACTG TCTGACTTTT TCAGATCAGG GTTTGCAAAC  
781 TTTTCTATTA AGAGTCAGGT AGCCAATAAT TTAAACTTTG TAGGCCATAT AGTCTCTGNT  
841 GCAACTACTC AATTCTGCCA CTATCAGGGA AAAGTAGACA TAGACNATAT ATTGGAAACT  
901 AATGAGCTTT GCTGNGGTTT ACTTTATGGA CATTGAATTT TATATAATTT TCACATGGCA  
961 CAAAATATTG GTCTTTTTTT GANTTTTTTC AACTATTAAA AA

Figure 11A (SEQ ID No:59)  
Exon 8, Human IPM200

1 AAAATGGCTC AGATTCATCC CTGCAAGGGG TTGNCCTCTG TGGCCTCCCT NAGAATTCTT  
61 TTCCCCTATT CTTAGAGCTA TGACCCCTCA TTCTTCTGGG GAAAGGAGGA GAGGATGGAC  
121 AAAATGTTGT CCAGGGTTTT CAGAGAAAAG TGATGGAATC CATGCTCTTT GAGACTCCCC  
181 CTCTAGGTCC AATGTTTGT TTTCCATCCA TAGTGGCGTA GATGTTTACT ATGCAGTTAC  
241 TGAACCTAAC CTGTTCTCTC TTTCCATCCA TAGTGGCGTA GATGTTTACT ATGCAGTTAC  
301 CTTCAATGGT GAGGCCATCA GCAATACCAC CTGGGACCTC ATTAGCCTTC ACTCCAACAA  
361 GGTGGAAAAC CATGGCCTTG TGGAACCTGA TGATAAACCC ACTGTTGTTT ATACAATCAG  
421 TAACTTCAGA GATTATATTG CTGAGACATT GCAGCAGAAT TTTTGTCTGG GGAACCTCTC  
481 CTTGAATCCA GATCCTGATT CCCTGCAGCT TATCAATGGT GAGTTTGATA TCCATCATGA  
541 AGTCCTTGTA TAGTTTCTTT TCCAGTATGC TCTGGTGTA ACTAATTTCC TGAAATATAT  
601 AAGGTTCTGA CCATTCTCTA GACTTTATGA GACAGGAGCC AACCTGATAT GAATGGAGTT  
661 TTAGCCATGC ACCTATTTTG GATAGATTAA TCCGGGGCTT TCTGGAATAT TTGTAGACAA  
721 AAGGCCACAG AGTGTGGAAA GTGGCAGTTA GAAGTAGTTT AGAGAAATAG GAGCAAAGCA  
781 TAAGAAAAAG GAAAGTAGTA CTTGGAAGTG TGCATTGAAA CAGGCTATAA TACTTCCCTG  
841 ACAACCGAGA CATGACCTCT CTGAGGTAAG TCAGCTAGTA AAGGCTTAAA AATCAGAGTG  
901 TAGAGAAAAA GGAAGAGCTC

Figure 11B (SEQ ID No:60)  
Exon 9, Human IPM200



1 AGCATAAACC CAAAGGAATT GAAATTTTCA GTACAACCTT TTTTACTTA AAAATTAATT  
 61 TAAAAATAAG CGCTTCATAG GAATCTTGAA CAGAATAANA ACTAACTTGA GAAAGGAAAG  
 121 GAAGTAATAG AGGAGTGTCC TAAATGTGAT AATGGGAAGA ATCTTTATTT TATGTTAGAT  
 181 TCTTATAATT CAGGCAGATT GTGCTAATAT AAATAAAATA TCTGAATAAA GTAACAAACA  
 241 TTTTCTAAGT AAGTGTGTCC CGTATTTTCT GCCAAAATCT AAACAATGAA GAGAAAGAAC  
 301 TTGACTTTCA GTTGTCCTG CACCTCAAAT ACAATAGGGC CTCATCTAAA AATGTTCTTT  
 361 AATATTGTTC TTTCCTCAGT GAGAGGAGTT TTGCGTCACC AAAGTGAAGA TCTAGTTTGG  
 421 AACACCCAAA GTTCAAGTCT TCAGGCAACG CCGTCATCTA TTCTGGTATG TTTTATGTT  
 481 TTATGCTAGA ACCAGGCCCT CAAGCTTGAT ATCGAATTCC TGCAGCCCGG GGGATCCACT  
 541 AGTTCTAGAG CGGCCGCCAC CGCGGTGGAG CTCCAGCTTT TGTTCCTTT AGTGAGGGTT  
 601 AATTTGAGC TTGGCGTAAT CATGGTCATA GCTGTTTCTT GTGTGAAATT GTTATCCGCT  
 661 CACAATTCCA CACAACATAC GAGCCGGAAG CATAAAGTGT AAAGCCTGGG GTGCCTAATG  
 721 AGTGAGCTAA CTCACATTAA TTGCGTTGCG CTCACTGCCC GCTTTCCAGT CGGGAAACCT  
 781 GTCGTGCCAG CTGCATTAAT GAATCGGCCA ACGCCGCGGG GAGAGGCGGG TTTGCGTATT  
 841 GGGCGCTNTT TCGCTTTCTN GCTTACTTAC TTCGTNGGCT TCGTCCGNTC GGCTGCGGCC  
 901 GAAGCGGTAT CAAGCTCACT CAAAGGCGGT AATACCGGGT ATCCACAAGA ATCAGGGGAT  
 961 AACGCAAGGA AAGAACA

Figure 12A (SEQ ID NO: 61)  
Exon 10, Human IPM200

1 GGTGAGAGGT GATATGCTTT TTNTCTAGAT ATTGGAATTN GACTATAAAT CGTGTTNGAT  
 61 TCTGGAGCCC ATGTCTCCTC CTAATCCTAA TATTATTAAT ACACCGCCTC CTTGTCCCTA  
 121 GAAGATCTGG GAATATAGAC AGATAGGTGG TATTTAAAAT CACTTTTTAT ATGTTTCTTT  
 181 TATCTATGAT ATGATTTAGC CTTTTTTTCC CCCCAGGATA ATACCTTTCA AGCTGCATGG  
 241 CCCTCAGCAG ATGAATCCAT CACCAGCAGT ATTCCACCAC TTGATTTTCA CTCTGGTCCT  
 301 CCCTCAGCCA CTGGCAGGGA ACTCTGGTCA GAAAGTCCTT TGGGTGATTT AGTGTCTACA  
 361 CACAAATTAG CCTTTCCTC GAAGATGGGC CTCAGCTCTT CCCCAGAGGT TTTAGAGGTT  
 421 AGCAGCTTGA CTCTTCATTC TGTACCCCCG GCAGTGCTTC AGACTGGCTT GCCTGTGGCT  
 481 TCTGAGGAAA GGACTTCTGG ATCTCACTTG GTAGAAGATG GTGAGAAACT TTAATTGCTT  
 541 TTCGTACTTC TTATTGTATC CGATGACAGG GGTTTTAAAG AGAGGAAGAG ACTATGGCTA  
 601 TGAAAAAACC ATGGTAGCAT TCATTAGGGG GAAAATGTCT TGGTAAAATT GTGTGTGAGA  
 661 GGAAACAATC AAATTTAATT TGTTGGAATG GAGAATCCAA ATAGGTAAAT AATAAGAAAT  
 721 AAAGTTGGGG AGCTGGGGTG GGGATCAATT AACAGACATT TTGAAGGTCA TATTGAAGGG  
 781 TATATAGTTT AGTTAAATTA CTGCTACTAC TATTAAAGAG CCACTTTACT TAAATATTGG  
 841 AGTAATAAAC AAATAGCACC AAAGAAGATT ATTCAACTAG GTTATAATAC AATTAGTTGT  
 901 GGGGGCCAAG TCTAAAGATT TTTACTTGTA GTAGTATTGT GAAGGGAAGA AGCCGAAATC  
 961 ATGGAGCCAC AGCAGAGATA AAGAAGTGAA AATGAAATAG ATAATCTAGA TGT

Figure 12B (SEQ ID NO: 62)  
Exon 11, Human IPM200

1 GTATTTGTTA TCCTCCGAGA AGGAGATAAT ATTCAATGAG TGA CTGTCCC ANATTGCAAA  
 61 CNACATGATC AGATCTTCTT GGTGTTTGC TAGATATGGA AAAGCAAAAG TCAACAATTG  
 121 TCCCTNTTAA CTTACACAGG AAAAACAGG CAACTAGTTT TATTAGGAGA NCTAGGAATA  
 181 CATTTTGGCA ACTCTGTAGA TTAATTAATG GAAACTTTA TTTT TAGGAT TAGCCAATGT  
 241 TGAAGAGTCA GAAGATTTTC TTTCTATTGA TTCATTGCCT TCAAGTTCAT TCACTCAACC  
 301 TGTGCCAAAA GAANCAATAC CATCCATGGA AGACTCTGAT GTGTCCTTAA CATCTTCACC  
 361 ATATCTGACC TCTTCTATAC CTTTTGGCTT GGACTCCTTG ACCTCCAAAG TCAAAGACCA  
 421 ATTA AAAAGTG AGCCCTTTCC TGCCAGATGC ATCCATGGAA AAAGAGTTAA TATTTGACGG  
 481 TGGTTTAGGT TCAGGGTCTG GGCAAAAGGT AGATCTGATT ACTTGCCCAT GGAGTGAGAC  
 541 TTCATCAGAG AAGAGCGCTG AACC ACTGTC CAAGCCGTGG CTTGAAGATG ATGATTCACT  
 601 TTTGCCAGCT GAGATTGAAG ACAAGAACT AGTTT TAGTT GACAAAATGG ATTCCACAGA  
 661 CCAAATTAGT AAGCACTCAA AATATGAACA TGATGACAGA TCCATACACT TTCCAGAGGA  
 721 AGAGCCTCTT AGTGGGCCTG CTGTGCCCCAT CTTGCGAGAT ACTGCAGCTG AATCTGCGTC  
 781 TCTAACCCTC CCCAAGCACA TATCAGAAGT ACCTGGTGTT GATGATTACT CAGTTACCAA  
 841 AGCACCTCTT ATACTGACAT CTGTAGCAAT CTCTGCCTCT ACTGATAAAT CAGATCAGGC  
 901 AGATGCCATC CTAAGGGAGG ATATGGAACA AATTACTGAG TCATCCA ACT ATGAATGGTT  
 961 TGACAGTGAG GTTTCAATGG TAAAGCCAGA TATGCAA ACT TTGTGGACTA TATTGCCAGA  
 1021 ATCAGAGAGA GTTTGGACAA GA ACTTCTTC CCTAGAGAAA TTGTCCAGAG ACATATTGGC  
 1081 AAGTACACCA CAGAGTGCTG ACAGGCTCTG GTTATCTGTG ACACAGTCTA CCAAATTGCC  
 1141 TCCAACCACA ATCTCCACCC TGCTAGAGGA TGAAGTAATT ATGGGTGTAC AGGATATTTT  
 1201 GTTAGAACTG GACCGGATAG GCACAGATTA CTATCAGCCT GAGCAAGTCC AAGAGCAAAA  
 1261 TGGCAAGGTT GGTAGTTATG TGGAAATGTC AACAAGTGTT CACTCCACAG AGATGGTTAG  
 1321 TGTGGCTTGG CCCACAGAAG GAGGAGATGA CTTGAGTTAT ACCCAGACTT CAGGAGCTTT  
 1381 GGTGGTTTTT TTCAGCCTCC GAGTGACTAA CATGATGTTT TCAGAAGATC TGTTTAATAA  
 1441 AA ACTCCTTG GAGTATAAAG CCCTGGAGCA AAGATTCTTA GAATTGGTAA GCATAAAAAG  
 1501 TGAAACATGG GCACTAGTGA ATAATCATGT ATGACCGACT CCTCCTCCCC TCTAGCACAT  
 1561 AAGGTCTGAG CCAGGGAAAG TGTGATCTGC TGTGAACATT CACTTCCTAT CATTCACAAA  
 1621 TAGTATCATG GCCTAGGGTT GGTAAGAAAA CAGTAAGACA TACAAGAAAT GGAAAACACA  
 1681 AAAGTGGCAT GAGAGTGATG TGATAATTTA CAAGGAAGAT TGTTTTCCAT GAATTATGGG  
 1741 GACTACAGTA AGGTTTGACA TTTCTCTTCA CATTTTACTG NGAAGCTAAT GTTTTGGGGG  
 1801 GTACCTATGT TGGCTCC

Figure 13 (SEQ ID No: 63)  
 Human IPM200, Exon 12

1 GGG AAGGCAG GGCACATGCA GAAGCAAGAG GCAGTGGAGA ACCACATCCA GAAAAGCCAC  
61 AGTGTGGAGT CTGAGAAAGT TTCCAAAACC AAGGACGGGA AACAGATACT GTGTTCCAAT  
121 CTAGACTAAT TCTAGATCTC TGGAATTGCT AGAGAGTTCA GTGATGAGCA GTCCTGATTG  
181 ACTGTACCTG GAGGATTTTG GTTGGCAACC CAAATGAAGG GATAATGATG AGTTAGAAAT  
241 TTTTGTAGTA ACCCCCAATG TATTACTGTT TCCACTATTC AACAGTAGC ACATCATTCT  
301 AGAAGGGACC TTAGAATTCC ATGGGGTTCC TAAATATCAC TATGAAAATC TTATAGCATT  
361 TCTAGTTTAT ACTGTCAAAT CATTCCTAAT TTGTACTTTT GTTAATTAAC AGTTTAAGTG  
421 TAGATAAAAT ACAATTAGGA AAAGTGAGGC AGGGTCTTAC CTGTGTTTTT GTTTTGTTTT  
481 GTTTGGGTAT GTATTGAACA AAATGTGACA CGCTGTCAAT AAACCTTACCA CTTTGTGATA  
541 TTGTAGCTGG TTCCCTATCT CCAGTCAAAT CTCACGGGGT TCCAGAACTT AGAAATCCTC  
601 AACTTCAGAA ATGGCAGCAT TGTGGTGAAC AGTCGAATGA AGTTTGCCAA TTCTGTCCCT  
661 CCTAACGTCA ACAATGCGGT GTACATGATT CTGGAAGACT TTTGTACCAC TGCCTACAAT  
721 ACCATGAACT TGGCTATTGA TAAATACTCT CTGATGTGG AATCAGGTAT GATATTGCCT  
781 AGCATGGTGG TTTCTTAGTA GAATCCAGTG ATTATTCTTG TGTGTTTTCT TCCTCATTCG  
841 ATTAAGGTGA ATCCAATACT TGCAGGAAAA AAGAGTACTA TGTCAGACAA ATCTTCCACA  
901 TCTTGGTAACT TAGTAAAATA TTTCTCCCAA GAACATCAAT ATCATTCCCT TTTCAAAACA  
961 TCGTCCAAAC ATGTTACTTT ATTATTTTAC CTCCATTCTT TTCTCTACCC ACTACATCTG  
1021 GCTTTGGTTT TTATTTACCT ACTGGATCTA TTCTTGCTAT GCCTTCATGT TGTCACGTGA  
1081 AGGGTTTGGG CCAT

Figure 14A (SEQ ID NO: 64)  
Exon 13, Human IPM200

1 GCTCTCTCTC CCCATTCATG TTCTCAGTGT TGTGCAAGGC ATGTAGCAGT GTATGTAGAG  
61 TGGAGGTCAA CTGCAGCAGG TTGGGGTTGG TGGAAATGAA TGGTCCATGA AAACCTGCATT  
121 TAATTTAGAT CTACAANTAC TATTGTGTTT AACTTAGATC TGCAATTACA TGGCATGGAT  
181 TTCTAAAGCT TCTACATGCT CCCTAGATAA AATATGTTAA GGCTTAGATA GGTCATAGGG  
241 TTTTATGATT TGGNCTCTGA GTTGCACAAA AATTTGACAA AAGCTTATTG ATCTATGATG  
301 AGTGAGAGTT TTTGTGTGTG GTATTGGTGG CGGATGGTGY ACTTTAATGG TTCTGGAAAG  
361 GAGTTGTCCC ATATACTTTG GGGGAGAACT TTAATGAAGG GCTTTGTATA CCCCAGTTTC  
421 TGTGTTTTGC CTTTCTTGC ATTATTCTTT GTTTAATGTT TTAGGTGATG AAGCCACCCC  
481 TTGCAAGTTT CAGGCCTGTA ATGAATTTTC AGAGTGTCTG GTCAACCCCT GGAGTGGAGA  
541 AGCAAAGTGC AGATGCTTCC CTGGATACCT GAGTGTGGAA GAACGGCCCT GTCAGAGTCT  
601 CTGTGACCTA CAGCCTGACT TCTGCTTGAA TGATGGAAAG TGTGACATTA TGCCTGGGCA  
661 CGGGGCCATT TGTAGGTATG TTGTAGTTAC AGATTTTGAC TTTANAGGCT ATAGATATTT  
721 CCTCTAAAGA AAAGGGGCCT GCACCTATAA TTTTAGGATA CTTATTATAG TATGCATTAT  
781 AGAAGTTATA TCTAGGCAAT AGATGGGAGC CATCTAACTG TCATGTGAGG ATGAGTTGTT  
841 TAACAGGCCT GAATTTCAAT TCAGTAATTT ATGCTGTTAG GGAACCTGCA AAAAAAATT  
901 GTCTAAATAT GTCCTACTGG CTGGGTGCAG TGGCTCACGC CTGTAATCCC AGCACTTTGG  
961 GAGGCCAAGG TGGGTGGATC ACCTGAGGTC GGGATATTTG AGACCATTCC CTGGGCAACA  
1021 TGGCCGAAAC CCCATCTTCT ACTAAAAATT ACCAAAAAAT TAGCCTTGGG GTGTGGGTGG  
1081 GCCAAGGGCC ACCTGTTNAA CTCCCCAAGC TACCCTTTGT GGAAGGCCTT AAGGGCAAGG  
1141 GAAGAAATTT GCTTTG

Figure 14B (SEQ ID NO: 65)  
Exon 14, Human IPM200

1 AGGAAATAAG TAGAAAATAA TTCCAGACTT CTTCTTATAT GAAAGAAGGA TAAAAGTTTA  
 61 TAAGGAGAAA AACCAGTCCC CGTCATGTCC AGAGAAATTA ATATTACCT AGAAAAAGCA  
 121 GTGATTTCCCT TTCCCTGTGG CCTTAGGGTT TGAAGGATAT CTTTAGCATA CTGAAAGGAC  
 181 ATGGGGCGTC TGGAGGCCTG GGTTCTAGGC CCAGTTCTGC AGCAGACTAA TTGTATGGCC  
 241 TAATGCCAGT CACTTTCCTT CCTAGGCTTG TTTTGTGGTT ATCTATAAAT AAGGATGTTA  
 301 AGTAGAATAA TTTCTTAAA CCTATTAGC TTTTATTCA GTTTTCTTTC AAACAGTCAT  
 361 TGAGGACCTA CTAGGTCTGT GCTGGGCTTT ATGCACTGCC TTAAATTGTA TGATCTTTTA  
 421 ATCTGTCTAT TCAACTCTTT ATGAAGCTTC ACGTGGTCAG CATTTATTTT TCTACTTTCC  
 481 TCTAGTCCCT CAGAAGGTTT TGCTGTTAAT TGTCAGTGTG AGCAGAGTGA TTCAGATATC  
 541 GGACTTGGTG ACTGTTGGTT GCAGGTGCCG GGTGGGTGAG AACTGGTGGT ACCGAGGCAA  
 601 GCACTGTGAG GAATTTGTGT CTGAGCCCGT GATCATAGGC ATCACTATTG CCTCCGTGGT  
 661 TGGACTTCTT GTCATCTTTT CTGCTATCAT CTACTTCTTC ATCAGGACTC TTCAAGCACA  
 721 CCATGACAGG AGTGAAAGAG AGAGTCCCTT CAGGTAAATA AGAAAGAGCA CA

Figure 15A (SEQ ID NO: 66)  
Exon 15, Human IPM200

1 GTCATTGGTT ATTATATTCT TATTGGGGTC TGACCTTTTC ATTAGACCTG TAACCTTCAT  
 61 CCAGGGCAGA GATAAAAGAT TATTTGTGTC AGCAGTGTGT AGAACAGTCC TATGCACATG  
 121 ATCAATGCTC GGTAAATATG TGTAGACCTG AGTTGAATTT AATTGAGGCT CTGCTTCCCC  
 181 TAGACCGTAA TATTTATATT TCAGTCAGAT TTGCTGCGTG GCTACACACT GATTTTCAAT  
 241 GTGTATAACT CTGGGAATGA TGAAGCTACA GTTTATGAAG CACCATCTAC TGGCAGACAT  
 301 AGTTTCCAAC ATTTATGAAT GCCAGGCGCC ATGGCAAATA AGATGAATGA GACATGGAAC  
 361 AAGTCCACAG GGCACCTGCC ATGGGTGTGA GGAAATCATA ATGATAACAC CTGACAAATA  
 421 ATTTTGTAGG TTGATCTAGA TGTTTTTCAC AGTTATGTCC CACCATTGTG GTAAAGTGCA  
 481 CCTGTTTTTC TTCAACAGAA ATATTGTCCC AGGTAAATAG TCTTCCACAT AGTTGAGCAT  
 541 CCAAACAAGA GCCTGAATCC ATCATATCTT TCTTTTAGTG GCTCCAGCAG GCAGCCTGAC  
 601 AGCCTCTCAT CTATTGAGAA TGCTGTGAAG TACAACCCCG TGTATGAAAG TCACAGGGCT  
 661 GGATGTGAGA AGTATGAGGG ACCCTATCCT CAGCATCCCT TCTACAGCTC TGCTAGCGGA  
 721 GACGTGATTG GTGGGCTGAG CAGAGAAGAA ATCAGACAGA TGTATGAGAG CAGTGAGCTT  
 781 TCCAGAGAGG TGGGAACTT TGCATTTATG TTGCTGTGCG AGCTACTGCT GGTGTGTGTG  
 841 TGGGGGAGCA GGGGGTGTG GGTG

Figure 15B (SEQ ID NO: 67)  
Exon 16, Human IPM200

1 CTTTAAGGAA AGTGTAAGAA AANTATTTTA GTAAATTGGG TTTTACCT CGTATCCTCC  
 61 TAGTCTATGA TATGCACAGA GTATTTAAAT TCTAAGCCGG TNCCTTATTT CCCCCACAAA  
 121 TGGCGCTTTT TTTTTTTTTT TTTGCGGTTA TTAAGTGGTA CTCTCTCCTT CCTCCCTTTC  
 181 TTCCTTAGAA ATATGTCTGA TTTAGAGCAG GACATGTAAT ATCCAGAGTA GTGTATGTAG  
 241 ATCCTTCCAT TTCTCTGAAA GTGCACACTC CTGCACTTCT TTCTTATAGC ATACTTCTGA  
 301 ATAGCCCAGA ATGTAACAAT TCCTTATGAA AATTAGAACC CCTTTTAAAA GGCTGTTGAG  
 361 GTTTTCTTAA TGCAATGTGT GGCCTATTGT TTCTTTTTTG TTTAAGGAAA TTCAAGAGAG  
 421 AATGAGAGTT TTGGAAGTGT ATGCCAATGA TCCTGAGTTT GCAGCTTTTG TGAGAGAGCA  
 481 ACAAGTGTA GCTTTTGAAA CAGCCCCCCA CCCCAGCCTA CAGACTTAAC AGTTTACTCT  
 541 AGAGTAATGT CACACCTGAG TGAGCACATA ATTTCTGTC CATGTGACAG GAGTCTCCGT  
 601 GATAACCAAC ATTTGTTGAG TTCTTCAAAG TTTATGCATG TCCAGGCAGA TTATCTCATT  
 661 TCTTCCTTAT AAGGGCTTTG TAAATTGAGT GTTCTTATT TGAGGAAAGG AAATCTTGGA  
 721 GACATGAAGG GACTTACTTA AGATGACAGT GATAGCCAGN GGCAGAGAAG ATTTAAACT  
 781 AAGATACTGT CTGTTTTGGA CTAGAGACGC CTGGACTACA CATAGTCTTT TCATATTTTC  
 841 TCTCTTGTTG NCATAGATCT CACTACGGTG ATCTGATTGA TCTGATGCCA TAAAATATTT  
 901 TTCATAGATA GTTCCTTTGA AGAACATTG AGTAGCCATA AGTCCTCACA TATTTCAACA

Figure 16A (SEQ ID NO: 68)  
Exon 17, Human IPM200

1 AAAATACACA CACAGAGTCT TATGAAACAA AGAAGATTG AACTAGAAAG ACCCTGTGAG  
 61 AAAAAAGAAA GTATACACAG GCTCTGTAAC CTTAGGAGGT TCACAGAAGG AATAAGACAT  
 121 TGGAAAGATG TCAGGCATGT AATCCAAACA GCATTTTCAG TTTTCACTTA GTTTCAGAGT  
 181 TTTCATCTAT CAGGTAGCCG AAAAAATGTT AATGGAGTTG ATTCAGGATT AAAGCATCAC  
 241 ATGATCTTTG TAGAGTGGAT TAAAAAAAT TTTAGCACAG AACAGAACAA CTTTCCTTCA  
 301 AATAAAGAAA AAAATAGAAA GTATTCATGA TTTTAGGAGT ATAGCTTAGT GATGTATGAC  
 361 AGTAATTGCA TTTTATTACA TTCTTGCTTT TTTTCTACTG AATTGCTCTT TGTGTTTCA  
 421 TGGCAGGGAA GAGGTTTAA CAAACTCCT GTTCTGAAAC TGATTAGAAG CCTGGAGAAG  
 481 ATGGAGATTA CTTGTTACTT ATGTCATATA ATTAACCTGG ATTTTAAACA CTGTTGGAAG  
 541 AAGAGTTTTC TATGAAAAAA TTAAATATAG GGCACACTGT TTTTTTTTCA GCTT

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Figure 16B (SEQ ID NO: 69)  
Exon 18, Human IPM200



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1  AGGGTGTAGG CTTTGAACC AGGACTCTTT AGGTTTAAAT CCTAGCTCTG CCACATATAC
61  TTTATTCTCC TCAAATTTAA AAGAGATAGT ATTAACAGTG TTTATATTGT CATATTGAGG
121 AATCTATGGA TAATCTATGG ACATCTCTAA GAACAATGTC TATCCACAAC ACAAGAGCTC
181 AATATACAGT AGTAGTTGCA GTGTGTTTCA TGACTCAGCA ATATGTAGCA TGTATAGTCA
241 AAATAATATA AAATCAAATA TTCAAAAACT GAAATTACAA TAATACTGAT GAAGAAAGAT
301 GGAAAGATGT TTACAATGAG TAGAAAGGGT ATGTGTGGAA GTGAAGTTAT TCTCAATATC
361 TATTATTTGA TAATACCTAA AAGTGAAAAC CTCCAAAATA GTAATAGAGG CATGTTATTT
421 AGAAGTGCAA ATGAGACTAC TAGAAGAATT AGGTTGATGA AGTAAAAATG GCTCCCCCTT
481 GAAAGAAGGC ATGGGTAGAA GAAAGGCACA ATTTTTTCTT ACAAACCTTG TAGAAAAAAA
541 GTATTTGACC CCTTAAACAC AGTGCATACA GATTTTAAAC ATTAAACCA GACTTAAATC
601 AAAAAAGCCA CCTGTATGTA ATTCCAAATC AAAAGCAATT TATAAAGCAG AACATAGAAG
661 AGAATGGAGA CAGTTTCGCT ATCTGTGGAG ACTAATACAT ATTGGATAAC CATATACTTT
721 CAGGGACAGA AATTAAGCTC TTTTAATGGA TGTTTCTTGT ACATGTCATT TTAGAAAACA
781 TCTGACCCTA ACTGTCAGCC TTATTCTCTG TTTGGCAGAA CTTCCCCTGG CTCTCTGTGT
841 CACTGTAACA GGTGAATAAC TAAGAAAAAA CTGTGTCTGT AGACACTTGT TTATAATGGC
901 ATTCAGGGTC CTGGAGCTAG GCTGACAGAT GCTCCTCCAG AAGGTTAATG AGATAAAGGT
961 TCCTCCAGCT GGCCCTTAAG CAGAGATTAC ACCTGAGGGA AAGACAAGCA GATTATTCCA
1021 GAAACAGACA CTGCTACATG TTCTTCATAA ATTAACACCC TCATAAAGGT AAACCAAGAA
1081 GGTTATCCTC AATCATCTGG TATCAATATA TAATTATTTT TCACATTTCT GTTACTTTTT
1141 AATGAGATTT GAGGTTGTTT TGTGATTGTT ATCAGAATTA CCAATGCACA AAAGCCAGAA
1201 TGTATTTGGA AACTAGAAGA GCTATTTTGG TTTTGGGAT TTTTCTCCAA GTTCAAGGAA
1261 CCAAAGGTAA GTTACTTAAA TGTTTACTTT TAAATTGCTT ATCTATAAAA TCTACCGATA
1321 GAAGTGAATA TTTAGAACCA ACAAGGCTAC CAATTTATCT CACGGGCTAG TATATAGTAG
1381 GCCTTGAATA AATATTGCTT GATTGATTGA ATAATTAATC ATCAGAAATG ATTTTCACTT
1441 GATTTAATAT TTAATACATG GTCTTAAGTG CAGTGAAGAT TAACAAAATA GGAGAGATGA
1501 ATGCATCCTA TTTGCTGTTT TAAAACATTC ATTGAAAATT CTTATTATTA AATGTAAATA
1561 NTATTAGTAG ATCTGGTGAA AACTAAACTC CATTTATCCA CCCGAAATTC AACCAAATAA
1621 AACCTAAAGG ATAAAAGTAA TGTTTTAAGT CATTTATGGT CAGACAAAAA AAAGTAAGTA
1681 TTTCTTACCT TCTCACAATG AAATCATGAG TTGCTTTCCC TTAGAAAATA GCAAACATTC
1741 TTCATCTTCA GGGTTCATGA TGACAACCAC TTCAAAATTT GGTGTGTTTT GAAAGTTGTA
1801 CGCATAAAAG AACTAGGCAA TGTATGTTCT TATGGCAAAT CTGCATCTGA ATATGAAA
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Figure 17 (SEQ ID NO: 70)

Promoter and Exon 1, Human IPM150







14 IFLOVQGT.KDISINIIHSETKDIDNP.....PRNETTESTEKMYKMSTMRRIFDLAKH...RTKRSAPFFPTGVKVCPOESMKQILDQLQAYYRLRV 101  
 16 IFVLIEGDFPFLTAQTYLS.IEEIQEPKSAVSFLLPEESTDLSLATKKKQPLDRR..ETERQWLIRRRRSILFPNGVKICPDESVAEAVANHVKYFKVRV 112

102 CQEAVWEAYRIFLDRIPDTGEYQDWVSICQOETFCFLDIGKNFSNSQEHLDLLOQRIKQRSFPDRKDEISAETLGEF...GETIVISTDVANVSLGPPP 198  
 113 CQEAVWEAFRTFWDRLPGREEYHYWMNLCEGVTISIFEMGTFNFSSEVHRSLIMKKLTY.....AKETVSSSE.LSSPVVPGDTSTLGDTTSLV...PHP 203

199 LT.....PDDTLLNEILDNTLNDTKMPTTERETEFVLEEQRVELSVSLVNQKFKAEADLSQSPYYQELAGKSQLOMQKIFKKLPGFKKIHV 285  
 204 EVDAYEGASESSLERPEESISNEI.ENVIEEATKPAGEQIAEF.....SIHLLGKYREELQDSSSFHHQHLEEFISEVENAFTGLPGYKEIRV 292

286 LGFRPKKEKDGSSSTEMQLTAIFKRHSAEAKSPAS.DLLSFDSNKIESEEVYHGTMEEDKQPEIYLTATDLKRLISKALEE..... 365  
 293 LEFRSPKEND..SGVDVYYAVTF...NGEAIISNTTWDLISLHNSKVEN....HGLVELDDKPTVVYTIISNFRDYIAETLQONFLLGNSSLNPDPSLQLI 383

366 .....EQSLDV.....GTIOFT.....DE.IAGSLP.....AFGPDTSSELPTSFAVITEDATL.....SPE..... 411  
 384 NVRGVLRHQTEDLVWNTQSSSLQATPSSILDNTFQAANPSADESITSSIPPLDFSSGPPSATGRELWSESPLGDLVSTHKLAPPSKMGSLSSSPEVLEVSS 483

412 .....LPP.....VEPQLETVDGAE...HGLPDTSWSPAMAST.....SLSEAPFFFMASSI.F...SLT....DQGT 464  
 484 LTLHSVTPAVLQTLGPVASEERTSGSHLVEDGLANVEESEDFLSIDSLPSSSPTQPVPKETIPSMEDSDVSLTSSP..YLTSSIPGLDSLTSKVKDQLK 581

465 TDTMATDQTM.....LVPG.....LTIPTSDYSAISQLALGISHP.....PA.....SSD.....DSRSSAGGED. 514  
 582 VSPFLPDASMEKELIFDGGLGSGGQKVDLITWPWSETSS.EKSAEPLSKPWLEDDDSLPAEIEDKKLVLDKMDSTDQISKHSHYEHDDRSTHFPEEE 680

515 .....MVRHLDDEM....DLSDTAP.....SEVPELSEY.....VSV..PD..... 544  
 681 PLSGPAVPIFADTAASASLTLPKHISEVPGVDDCSVTKAPLILTSVAISASTDKSDQADAILREDMEQITESSNYEWFDSVSMVKPDMQTLWTILPES 780

545 .....HFLE....D...TTPVSA.....LQ.....YI.....TTSSMTI 566  
 781 ERVWTRTSSLEKLSRDILASTPQSADRLWLSVTQSTKLPTTISTLLEDEVINGVQDISLELDRICTDYQPEQVQEQNGKVGSYVEMSTSVHSTEMVSV 880

567 A.P.KGRE.....LVVFFSLRVANMAFNSDLFNKSSLEYRALEQOFTQLLVPLYLRSNLTGFKQLEILNFRNGSVIVNSKMKFAKSVPPNLTKAVH 654  
 881 AWPTEGGDDLSYTTQSGALVVFFSLRVNMMFSEDLFNKNSLEYKALEQRFLLELLVPLYLQSNLTGFMNLEILNFRNGSVIVNSRMKFANSVPPNVMNAVY 980

655 GVLEDFRSAAAQQLHLEIDSYSNLNIEPADQADPCKFLACGEFAQCCKVKNERTEEAECCRCKPGYDSQGSLDGLEPGLCGPGTKE.....CEVLQKGAPCR 748  
 981 MILEDPCCTTAYNTMNLAIKYSLDVESGDEANPCKFQACNEFSECLVNPWSGEAKCRCFPGYLSVEERPCQS..LCDLQPDFCLNDGKCDIMPGRGAICR 1078

Fig. 20

60600T-30T00



10 20 30 40

7-11-68 10:00 AM DIS INIYHSETKDID PI

10343705 10343706

Figure 21A

Human IPM 150 - - K V I R N S L T V E Y E E N H Q D Y I C E  
 Isoform 1 - - K V I R N S L L T V E Y E E N H Q D Y I C E  
 Isoform 2 - - K V I R N S L L T V E Y E E N H Q D Y I C E  
 Mouse IPM 150 V K R N L - S - - A - I G F E E E X Q D Y I C E

790

800

810

830

840

Figure 21B



# IPM 200 protein sequences

Monkey IPM 200	10	20	30	40	50	60
Human IPM 200	10	20	30	40	50	60
Rat IPM 200	10	20	30	40	50	60
Mouse IPM 200	10	20	30	40	50	60
Monkey IPM 200	70	80	90	100	110	120
Human IPM 200	70	80	90	100	110	120
Rat IPM 200	70	80	90	100	110	120
Mouse IPM 200	70	80	90	100	110	120
Monkey IPM 200	130	140	150	160	170	180
Human IPM 200	130	140	150	160	170	180
Rat IPM 200	130	140	150	160	170	180
Mouse IPM 200	130	140	150	160	170	180
Monkey IPM 200	190	200	210	220	230	240
Human IPM 200	190	200	210	220	230	240
Rat IPM 200	190	200	210	220	230	240
Mouse IPM 200	190	200	210	220	230	240
Monkey IPM 200	250	260	270	280	290	300
Human IPM 200	250	260	270	280	290	300
Rat IPM 200	250	260	270	280	290	300
Mouse IPM 200	250	260	270	280	290	300
Monkey IPM 200	310	320	330	340	350	360
Human IPM 200	310	320	330	340	350	360
Rat IPM 200	310	320	330	340	350	360
Mouse IPM 200	310	320	330	340	350	360
Monkey IPM 200	370	380	390	400	410	420
Human IPM 200	370	380	390	400	410	420
Rat IPM 200	370	380	390	400	410	420
Mouse IPM 200	370	380	390	400	410	420
Monkey IPM 200	430	440	450	460	470	480
Human IPM 200	430	440	450	460	470	480
Rat IPM 200	430	440	450	460	470	480
Mouse IPM 200	430	440	450	460	470	480
Monkey IPM 200	490	500	510	520	530	540
Human IPM 200	490	500	510	520	530	540
Rat IPM 200	490	500	510	520	530	540
Mouse IPM 200	490	500	510	520	530	540
Monkey IPM 200	550	560	570	580	590	600
Human IPM 200	550	560	570	580	590	600
Rat IPM 200	550	560	570	580	590	600
Mouse IPM 200	550	560	570	580	590	600
Monkey IPM 200	610	620	630	640	650	660
Human IPM 200	610	620	630	640	650	660
Rat IPM 200	610	620	630	640	650	660
Mouse IPM 200	610	620	630	640	650	660
Monkey IPM 200	670	680	690	700	710	720
Human IPM 200	670	680	690	700	710	720
Rat IPM 200	670	680	690	700	710	720
Mouse IPM 200	670	680	690	700	710	720
Monkey IPM 200	730	740	750	760	770	780
Human IPM 200	730	740	750	760	770	780
Rat IPM 200	730	740	750	760	770	780
Mouse IPM 200	730	740	750	760	770	780

Figure 22A



Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

790 800 810 820 830 840  
E S S N Y E W F D E M V K E D M O T L W T I P E E R V W T R T E K E S R D I L A S T P O B A D E L W E S  
P S P K G L - D S A R L V A R F D M O P V W A I D P D T W A R T S G K D S S O T L V S Y P E S A D S W U K  
S A H K E L - D S E V P V S R E D M O P V W M E E D T T A T S S G E L S O T L A S T P E S T O R L W K

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

850 860 870 880 890 900  
V T Q S T K - - P T I T L E D D V M G Y G D P L R D R I M D D Y Q P E Q V Q E O N G E V G S T A T M S  
A S M T Q P A E L P S T H S I Q I E D D Y M A I C N S E P L Q V E D D S O P E L T Q E O N A V D S V E M P  
A S M T Q S T E L S T T H S T Q L E E E V M A S G D L S E L B Q V E T S T A Y S S E L T E E Q H G R A D S A T M S

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

910 920 930 940 950 960  
T S V H S T E T V S V W W E E D D L Y T T S S G A L V E L A T T M M F G E L L R E A D P T A L E A  
T H V H Y T E M P L Y A Q P K C V L - S R T O T A G A T V P T A R A T N M L S T O D I F N K N S I E V A L E O  
T S V H Y T E M P I A L L P K C V L - S H T O T A G A L A V P S A R V I N N L P S E D I F N K N S I E V A L E O

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

970 980 990 1000 1010 1020  
P L L V V T E I O S N T U P O N I T A N F E N G I V Y N E K M K P A N S V P E N V A N N A V M I L E D D E C E T  
P L L V V T E I O S N T U P O N I T A N F E N G I V Y N E K M K P A E S V P E N V A N N A V M I L E D D E C E T  
P L L V V T E I O S N T U P O N I T A N F E N G I V Y N E K M K P A E S A P E N V A N N A V M I L E D D E C E T

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

1030 1040 1050 1060 1070 1080  
A N T A A A A O P T S I D V E S G D E A N S E F O A C E P P C L Y N P V S G E A K R C F F C Y L S Y E E R P  
A Q M I D D D S S D V S G D A N S E F O A C E P P C L Y N P V S G E A K R C F F C Y L S Y E E R P  
A Q M I D D D S S S I T E S O D E A N S E F O A C E P P C L Y N P V S G E A K R C F F C Y L S Y E E R P

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

1090 1100 1110 1120 1130 1140  
C G S L C D T O P D F C L N D G K C D I M F G H G A I C R C V G E N W W Y R G K H G E E F V S E P V I G C I T A S V  
C O S V C D L O P D F C L N D G K C D V M F G H G A I C R C V G S N W W Y R G O H C E E F V S E P F V I G C I T A S V  
C O S L C D L O P D F C L N D G K C D I M F G H G A I C R C V G S N W W Y R G O H C E E F V S E P F V I G C I T A S V

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

1150 1160 1170 1180 1190 1200  
V G L V I F S A I I Y P F I R T L O A H H D R S E E S S P F S G S S E O P D S I S S I E N A V K Y N P V Y E S H R A G  
V S L L V A S A V V F P L A K M L O A Q N V R R E Q R T - - N R Q P D I L S V E N A M K N P A Y E S R L A G  
V S F L L V A S A V V F L V K M L O A Q N V R R E Q R T S - S S E H H D S I S S V E N A M K Y N P A Y E S H L A G

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

1210 1220 1230 1240 1250 1260  
G R K Y E G P Y P O H P F Y S S A S G D W T G G L S E E F I R O M Y E S S E L S R E E I O E R M R V I E L Y A N D P E E  
C E Q M E K P Y S Q H P F Y S S A S E E V I G G I S E E F I R O M Y E S S D E A K E R I O E R M R I L E L Y A N D P E E  
C E L Y L K S Y S Q H P F Y S S A S E E V A G G L S E E F I R O M Y E S S D I S K E E I O E R M R I L E L Y A N D P E E

Monkey IPM 200  
Human IPM 200  
Rat IPM 200  
Mouse IPM 200

1270 1280 1290 1300 1310 1320  
A A F V R E Q Q V E E V  
A A F V R E H E M E E L  
A A F V R E H Q M E E L

Figure 22 B